THE

NORTH AMERICAN REVIEW.

JANUARY, 1885.

No. 338.

Tros Tyriusque mihi nullo discrimine agetur.

NEW YORK:
No. 30 LAFAYETTE PLACE.

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VITUPERATION IN POLITICS.

In an ideal method of popular government candidates for office would be selected for their faculty for public business, their good sense, their probity, and their proved purpose to sacrifice personal interests and ambition to a constitutional and impartial administration of their trust; the ordinary presumption being that they who are least anxious for the office are worthiest of the trust. An election campaign would consist of a temperate discussion, addressed to the intelligence of the people, of any questions of statesmanship and policy involved in the pending issue, with only such criticism of the private character of the candidate as might relate to his convictions and qualifications in those particulars. The election itself would then be a fair expression, under the provisions of law, of the choice of every citizen entitled to suffrage. Whatever capacities or accomplishments, virtues or graces, might be found in the candidate beyond the mark thus designated, must be regarded as advantages rather than as essentials to his fitness; and whatever defects he might have in other respects would be occasions of understood regret rather than subjects for gratuitous gossip or public attack. It is assumed that moral decency

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is included in "probity." It is also assumed that experience has shown political parties to be a general convenience for carrying on the practical operations of the governmental system. They are not the creature of the state, but of exigencies in the state that may be local or transient. They are a foe to good government when they substitute subordinate ends for the order and welfare of society; they are a usurpation when they invade personal independence of thought or action; they are unpatriotic when they coerce political conduct to the damage of personal manhood; and they are an impertinence when they undertake to dictate to the judgment or conscience of the individual voter.

Vituperation in politics is largely due to party in politics. All the personal animosities between politicians in the whole country would not go very far to produce the venom discharged from press and platform in the course of a presidential election; nor would it be distilled or diffused to any considerable extent by the mere heating and antagonizing force of differences of opinion on great matters of public concern. It is true that some of these, pertaining to both domestic and foreign policy, so affect material industries and profits as to engage passion as well as reason and arouse a polemical temper. Regarded, however, purely as subjects of national legislation, or as studies in political economy, it cannot be supposed that State rights and federal centralization, internal revenue or improvements, the tariff or the currency, could ever provoke more than a moderate amount of angry abuse. Into other questions, like slavery, repudiation, Mormonism, and the regulation of the sale of liquors, a moral sentiment enters that is not unlikely to find vent in immoral speech. Yet it can hardly be doubted that reasonable limits would be set to all this sort of evil but for the instigation of that peculiar element in the social nature which we call party-spirit. It is one of the ways in which man in combinations is worse than man by himself. Just as zeal for a sect in religion substitutes itself for faith in the Original of all religious light and life, becoming at once provincial and quarrelsome, so servitude to a political party, with all its behests and devices, displaces loyalty to the supreme seat of truth and right in the nation, and is fatal to patriotism. Party is made a power of itself, irrespective of the principle that created it, standing somewhere between the sphere of personal accountability and the law of the land. It takes on authority, claims rights, issues

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commands, exercises privileges. Among the latter is the liberty of hatred and misrepresentation, the privilege of being a common scold. Here is an advocate before an unsworn bench and jury, unrestrained by the decencies of the court-room. What wonder if it sometimes sinks to vulgarity? If it is said that these dangers are obviated by the circumstance that parties are set over against one another, so that they neutralize each other's wrongs, there is nevertheless a residuum of mischief, apart from the question directly in hand, in an injury done to the manners and character of the people. Without pretending that politics can be altogether detached from parties, thoughtful men, in proportion as they are patriotic, will weigh that injury.

In view of the magnitude of this evil, as lately shown in the United States, one casts about in a spirit of judicial fairness to find some possible palliation. Allow, then, that in the masculine encounters of debate hard blows must be given and taken, that robust contestants cannot always be expected to glove their hands or polish their blades, and that wounded sensibilities are not to complain if the campaign does not always move

> "To the Dorian mood
> Of flutes and soft recorders."

Allow also that, under the glamour of the strife, to the eye of his opponent a candidate for office is partially dehumanized and passes for the time into the order of insensates. Allow, further, that there is a widely accepted theory that, except for the immediate political purpose, the objurgative language is divested of its usually offensive meaning, being by common consent canceled after election. These extenuations are admissible; but they are, after all, much too slender to save the vituperative habit from being an abomination.

As most germane to the subject-matter, among the counts of this reproach stands first a degradation of the business of government itself. Inevitably men recognize a reciprocal relation between high place and him who holds it, between rule and ruler, between official authority and the personage wielding it. Republics have not yet exterminated the reverence that hedges about the person of a sovereign, nor is it best that, while changing the names and forms of power, they should abolish this salutary respect. Whatever lowers the height or cheapens the dignity of the chief—emperor or president—touches the

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sanctity of law and impairs the awfulness of its execution, so long as the higher instincts of mankind continue as they are. Despotic Cæsars or criminal presidents may have to be reckoned with terribly in the name of justice or liberty; but even regicide and impeachment ought to be managed with a certain decorum. "Honor the king." Little service is done to history or morality by pictures of the vices and foibles of crown or court. Scott's capital representation of the weakness of royalty, in the "Fortunes of Nigel," hardly leaves the sweet taste in the mouth with which one ordinarily turns from his pages. If an empire is dishonored with its throne, so is a democracy with its leaders; and there are better ways of making such leaders what they ought to be than vilifying their reputations. St. Paul was writing for the subjects of no particular kind of government, and like both a statesman and a gentleman, no less than an apostle, when he directed one of his juniors: "Put them in mind to be subject to principalities and powers, to obey magistrates, to speak evil of no man, to be no brawlers," as if political vituperation were the very thing he had in mind.

The standing of the presidency itself before the world, whether or not it is loftier than any kingship, has not been elevated by the canvass just closed, for ribaldry can elevate nothing. Whichever of the principal candidates might have prevailed, it must take more than four years of blameless living and administrative integrity to clear him of all marks and memories of the needless smirches with which ferocious pens and a prostituted art have blotted his name. Coarsely done or cleverly done, that cruel business has now, so soon, no approval in the conscience or kind-heartedness of the doers. It is even doubtful if the letters of Junius, unique contribution as they were to literature, classical as their invective is, raised the tone of British public life, or really changed the general estimate of North or Mansfield, Lord Granby or the Duke of Grafton. What shall be said of the lampoons of London, Paris, and New York? In this country, more than in any on earth, each citizen has a vital share in the common stock of national credit; here is a universal motive for the maintenance of that credit, and one means of maintaining it is to be jealous of the good repute of its chosen representatives. How much the political character of the country suffers from the ordeal of defamation to which all candidates for elective offices are exposed, begins to

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appear. A well-bred and self-respecting person need not be very fastidious to decline a race where the prize, if gained, is no offset to the bespattering on the course; or a post where his service to his constituents must be crippled by the malign falsehoods heaped on him before he reaches it. At almost any time in the past thirty years there have been statesmen and scholars in these States, whose names could be easily spoken, and enough of them to furnish a cabinet, if not a senate, who have silently preferred a clean retirement to a calumnious publicity. Neither property nor education, commerce nor manufactures, legislature nor judiciary, can afford to dispense with the strongest minds and ripest wisdom at the reckless pleasure of a few unscrupulous orators, editors, or preachers. It may be answered, that brave men should be equal to martyrdom. We are not dealing at present with the victims, but with the tormentors. During the presidential struggle ending in 1868 the writer of this was in conversation in Massachusetts with one of the most earnest and successful ministers in the land, who lived in one of the Middle States, and had extensive opportunities to know men as well as things accurately. Mention being casually made of Horatio Seymour, whose name was then before the people, the minister said, speaking without the least hesitation, positively and emphatically: "Mr. Seymour, sir, is a bad man; I refer not to his politics, but to his character. He is a copperhead, to be sure; but that is not what I mean now. He is a thoroughly bad man." Not many months afterward the hearer of this perfectly sincere slander had abundant knowledge that Mr. Seymour's private life was and had been as nearly faultless as that of any Christian man within his acquaintance, and that the confidence reposed in him by those who knew him was absolute and unbounded.

Other lines of life furnish no parallel to this traducement. In parliamentary assemblies, at the bar, on the exchange, on the street, in all the intercourse of civilized communities, a common law of civility condemns and restrains even personalities that are not slanderous, much more scurrility. Neighbors or strangers are not apt to assail each other rancorously with tongue or types on account of divergences of opinion on other subjects; and yet those differences continually divide men, as to their real interests, far more widely than almost any in politics. How is it that so rational an undertaking as a choice of rulers opens the sluice-ways? What can be the secret of

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this affinity for poison in the process of reducing to practice a theory of political economy? Why should the fact that the friends of a fellow-citizen have thought him worthy to take up a grave and august duty suddenly develop the brutal side of our constitution, stimulate the relish for human vivisection, uncover again in the highest type the claws and stings of inferior animals, and rouse in mild-mannered husbands and fathers, sitting at desks or standing on platforms, the savagery that has been slumbering since the days of Hengist and Horsa? It looks like an exception to the unities of nature. It is a puzzle that might well exercise the wits of the masters of journalism for four years to come, North and South, East and West. A story of Samuel Ward, the "Sam Ward" of English dinner-tables, "the most perfect gentleman of either hemisphere," is pertinent. In a company of clever people, who were talking of horses, as Englishmen occasionally do after dinner, Professor Huxley observed that the modern horse is without question a descendant of the ancient mesohippus; to which remark Mr. Ward replied that it was very sad, but "the scandal never would have come out if the horse hadn't been running for something."

Suppose we apply a test of sincerity. The struggle of 1884 has been attended with an unprecedented display of moral sensibility in two directions; in fact, it has created an original moral classification. As a singular effect of the nominations, it has been discovered that all Republicans have an intense horror of personal impurity, and that all Democrats abominate fraud and falsehood. That there should be just this uniform coincidence between the line dividing two great political parties and the line between two familiar forms of iniquity is what no sagacity could have foreseen. What can be the hidden tie between free trade and veracity, or chastity and protection? The two parties committed themselves on the ethical issue with a distinctness and emphasis that could leave no manner of misunderstanding. They declared themselves in every possible way in which opinion and conviction and passion can be expressed. What must follow? Whichever candidate was elected we should expect to see a new era of cleanliness and integrity. As the vote was close, just about one-half of the nation hereafter will be faultlessly chaste, and the other half incorruptibly honest. Dissolute or sensual Republicans —

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whether editors, publishers, speech-makers, or office-holders — will be patterns of domestic virtue. Lying, sordid, unscrupulous Democrats will disappear. People will say of man or woman, "He is as trustworthy as a Democrat," or "She is as modest as a Republican." The city of Washington will be transformed, unless the country has been for four months the theater of hypocrisy, and the canvass a din of "sound and fury signifying nothing."

Something might be said of the insult put by the scurrilous style of political controversy upon the cause of good letters. Literary purity in America has many perils. Not the least of them lies in the rapidity and immensity of composition and declamation in our periodical elections. Newspaper writing favors some rhetorical merits, notably energy, conciseness, and vividness; and we have some fine specimens of editorial ability. It cannot be believed that the masters in that responsible calling will permit the disgraceful mistakes of the past year to be repeated. They will hardly consent, by constant extravagance of epithets and expletives in personal and partisan detraction, to destroy actual distinctions, to submerge the lights and shades of language under an effusion of words so superlative as to be meaningless, or to disfigure their style with slang. It would seem reasonable to hope that a corresponding standard of taste, if not the rule of right, must forbid intrusion into those private quarters where either the bad traits imputed do not touch the administration of the office for which the candidate is set up, or where condemnation cannot be justified till a judicial tribunal has pronounced sentence. The Almighty has often used rough instruments for rough work, thrashing guilty nations with jagged flails; but he reserves the ultimate judgment of men to his own omniscience.

Apologies have been sometimes made for profane swearing, on the ground that a sound of strength in it carries compulsion, commanding obedience on the part of minds so low as to be insensible to any decorous address. Some such pretext may be thought to excuse violence or acerbity in polemics. It is a flimsy defense, and it puts an undeserved contempt on even the worst of our kind. Men of any intellectual or moral rank whatever are not convinced or converted or corrected by wrath. They who are farthest astray or farthest down will see through the shallowness of those opponents who vilify only because they are

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vile, or use filth to fight with because they have no other ammunition. But charity forbids us to vituperate even the vituperators. To a degree deplorable and extraordinary we have had a political campaign of dirt and disgust. Let the dirt fall to dirt. The disgust ought to remain to admonish us when the temptation returns. Nobody is the better, wiser, happier for all the scandals. Were there any actual service to any party in obloquy, the benefit on one side would offset the benefit on the other, like two successive torch-light processions with their pyrotechnics, leaving nothing but a bad smell in the air. It is not well to be reading every day, for four or five months, columns of the most explicit and dogmatic accusations, which at best make only an impression of unreality, exciting a frequent suspicion that we are being fooled, and, for the time, expelling from the mind every generous sentiment and every noble thought. According to their natural or acquired moral aversions, men and women will feel special indignation either at sins of the will or sins of impulse, at rapacity or lust, at Marlborough or William Wycherley, at Sunderland or Henry Sidney. It will be safe to allow history and God to make up the final award for each of them. It will not be safe at all to construct standards of moral judgment out of our partisan predilections, or to let political prejudice instead of certified evidence determine our utterances about the living or the dead.

F. D. HUNTINGTON.

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FROUDE'S LIFE OF CARLYLE.

THE greatest master of English prose within our generation intrusted the story of his life to one of the most skillful of living writers. The material for judging Thomas Carlyle is ample indeed: thirty octavo volumes of his own, four volumes by his biographer, two volumes of his "Reminiscences," three volumes of his wife's letters, diaries, notes, personal anecdotes, gossip, portraits. Never was man—neither Johnson, Voltaire, Goethe, nor Byron—more familiar, more interesting. We know now, perhaps, all of importance that we are ever likely to know. Sartor stands before us at last as mere man. The philosopher of clothes has stripped off his own, to show us that he stands a son of Adam, assuredly not ashamed, as bare before the world as when he came into it nearly ninety years ago.

Have we gained so very much by all this volume of biographical matter? Do we know Thomas Carlyle really better for it, more truly than we knew him from his books forty years ago, and from the passing glimpses of him and tales about him that we in London used to have while he was with us? It may be doubted. The man is in substance what we knew him and judged him to be. The biographies and autobiographies, the unroofing of his home and the unveiling of his hearth, the letters, journals, and recorded sayings, are intensely interesting. But they have told us things that we would rather not have heard. Those who loved him and those who loved her have been shocked, amazed, ashamed, in turn. Those who love good men and good women, those who honor great intellects, those who reverence human nature, have been wounded to the heart. Foul odors, as from a charnel-house, have been suddenly opened on us. We feel as if, in obedience to a call of duty, which we had never knowingly undertaken, we had been forced to stand beside some *post mortem* dissection of one we revered; as if the diaries of his very physi-

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cians and surgeons had been read to us. They have shown us the very entrails of our dead friend.

> "Expede Hannibalem, quot libras in duce summo
> Invenies?"

And yet, now that we have gone through all this, do we really know him better? Is there anything essential that we did not already know? Of essential, nothing. It is the Thomas Carlyle we knew all our lives—great prose-poet, potent inspirer of high purposes, master of literary painting, a type of indomitable courage. His own newly published words are full of the old force, but they add nothing to our sense of his genius. The anecdotes and the revelations have a ghastly interest that is difficult to resist. He holds us with his glittering eye; we listen like a three-years' child; the mariner hath his will. We must all stand and hear the tale, even if we shudder. But the tale tells us nothing that we did not know.

And yet, perhaps, to the multitude and the thoughtless, the new biographical instrument through which we are bidden to look at our old master may prove a hindrance and a source of error. Those who can use the human microscope will understand the exaggeration and distortion it presents. The rugosities of the surface, the anatomical details it reveals, will not disgust them. But the many will be puzzled and misled. Such was the imaginative hypertrophy in which Carlyle's great brain habitually worked, such the Rabelaisian redundancy of his humor, such the punctilious piety of his literary executor, that his memory has been subjected to a wholly abnormal examination. Jeremy Bentham, in the interest of mankind and to the furtherance of science, left his body to be dealt with by the surgeons, and then to be preserved to the gaze of the world in the museum of University College. Thomas Carlyle has chosen to leave his life and his home, his aches and his sores, his grumblings and his washing-bills, to the impartial verdict of posterity. In Mr. Froude he has found a trustee who is ready to carry out his wishes without flinching. The Shakespearean wealth of imagery that Carlyle carried about with him into every detail of the supper-table or the wardrobe, the scrupulosity of the disciple, and his abundant power as a colorist, have contrived to present a series of pictures that, to those not accustomed to the methods of psychological portrait-painting,

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may give the effect of a caricature. It is as if the living body of Thomas Carlyle were subjected to the resources of modern science, and the untrained public were called in to stand at the instruments. The microphone is used to enlarge his speech. The grunt or the psha that escapes the best of us at times is heard, by Mr. Froude's scientific appliances, as the roaring of a wounded buffalo. The old man's laugh, which in life was so cheery, comes up to us as out of a phonograph, harsh as the mockery of the devils that Dante heard in Malebolge. The oxy-hydrogen microscope is applied to the pimples on his chin or the warts on his thumb, and they loom to us as big as wens or cancers. The electric light is thrown upon the bared nerve; the photograph reveals the excoriations or callosities of every inch of skin. Poor Swift suffered something of the kind, and Rousseau; and one cannot but regret that, to a brain so far more sane, to a nature so far more robust than theirs, it has been needful to apply a somewhat similar resource.

As we read these letters and diaries, these tales of Carlyle and of his wife, on which art has thrown a light so dazzling, and a magnifying power so peculiar, we feel as if we were caught up again into the bewildering realm of Brobdingnag. Husband and wife rail at each other like giants and giantesses in a fairy tale; when they have a tiff, it stuns us like the Tower of Babel. The giant's head is the size of a house, with warts like a camel's hump, and a hide like an elephant's. Bugs as big as hedge-hogs crawl over his bed. Cocks and hens as large as ostriches crow and scream with the power of a steam-whistle. The giant clears his throat with the sound of an express train; and if his stomach aches, his groaning is as loud as the roaring of a cow that has lost her calf. We know, if the world does not, that all this is an optical and acoustic effect of the oxy-hydrogen or electric magnifier, of the combination of literary telephone, microphone, and phonograph. But though we know better than to take it all as literal, we are not raised or purified by it. We do not know our fine old master any better, we do not love him more, we do not feel him to be a greater, more creative soul. No, rather contrariwise.

Thomas Carlyle stands out to us in these posthumous volumes substantially the man we found him in the thirty volumes of his works. Somewhat darker, fiercer, more inhuman in his ill moods, perhaps; more cruel in little things than we

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could suppose; more petulant and unmanly at times, with uglier domestic skeletons than we ever suspected. All this is clear and naked. He and his trustee will have it so. They have forced us to pry into his vitals, one might almost say into his boils and blains. And the world has turned aside shuddering. But this is not all the man, nor the true man; much of it we see to be morbid anatomy; much of it is mere literary exaggeration. Let us look calmly at the whole tale, and weigh the whole thirty-nine volumes in the mass, and we see still a very great nature; a very noble life, however unlovely; a very memorable work done, passing though it be, leaving no fruit behind. But in the end the man stands out, of solid worth and indomitable will; capable of great generosity, of sincere love; faithful, truthful, simple, kindly, in the main, in all the greater duties; and of heroic courage in the task to which his life was so passionately dedicated from his youth. This is the substance, mixed as we now see it, from first to last, with really ferocious habits in smaller things, strange coarseness of fiber, an egoism hardly sane, and laughable weakness in the petty ills of existence. That imagination of his, as powerful in its sphere as any recorded in our literature, is now seen to be part of his breath and life. The poet's eye rolls in a fine frenzy night and day incessantly, as he tosses on his bed or eats his porridge, or walks abroad. Carlyle lives in one waking vision; houses, factories, fields and mountains glared at him like phantoms in Hades; men and women around him gibbered with the hollow voices of ghosts; the ordinary sounds of our daily life — a barking dog, a crowing cock, the rattle of wheels, and the tradesman's call — seemed to him the din of a nightmare. Carlyle walked about London like Dante in the streets of Verona, gnawing his own heart and dreaming dreams of Inferno. To both the passers-by might have said, See! there goes the man who has seen hell!

And that marvelous gift of language we see in his journals and letters to be the very skin of his body; the style itself part of his very mind, which he could no more put off than he could put off his Annandale accent. We see it shaping every word he uttered or spoke, to his wife, his mother, the most trivial phrase, the most solemn records of his heart,— all stand in the irrepressible Carlylese. Carlylese is not a wholly satisfactory, never a pleasing tongue; the finest Carlylese is never equal to fine English; and yet it is one of the most potent instruments

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ever used by articulate Englishman. And here we see it growing upon him, mastering him, deforming his very thought at last; becoming in the end a fetish to him, a mannerism or habit, as unpleasant as that of cursing or spitting.

The essential thing, perhaps the only thing, about a writer that concerns the public is how he wrote his books. And in this biography we see Carlyle at work, full of zeal and endurance. He was a great and powerful worker. Yet even here let us not exaggerate. Compared with the really great students of the world, Carlyle was almost an amateur. Littré, with his authentic sixteen hours of work each day, an ordinary German professor, scores of scholars and students, much exceed his utmost limits. Indeed, the book gives us rather the impression of very frequent holidays and an immense range of social entertainment. It is the same with his material resources. Carlyle lived and worked in poverty, in most honorable poverty, most nobly accepted and even welcomed. There is nothing finer in literary history than the stern resolution with which he clung to a life of simplicity. Yet here, again, one must not exaggerate. His real difficulties about money lasted at most four or five years. During the greater part of his life he had nearly all that he seriously needed. At no time did his mode of living fall below the standard of comfort to which he had been accustomed to his full manhood. It would have been regarded as luxurious by his father and his mother, his sisters, and his entire family. A man that kept a horse to ride almost all through life; made annual tours to Scotland, at times to Wales, Ireland, Germany, or the Mediterranean; whose friends gave him horses, wine, books, houses, whenever they were needed; to whom the most delightful homes in England were always open; whom so many persons, both friends and strangers, served freely for love, was never in poverty. To those who recall how many men of genius have labored in real want, in absolute neglect, sick, friendless, oppressed, and hungry, it is not pleasant to read these howls of rage and despair from a man that was well fed, well housed, well received, married to a noble woman, welcomed by all that is great, powerful, and cultured, surfeited with all that wealth could offer him, and bored by the attentions of a crowd of devoted friends.

And this miserable tale of his married life is all clear now; neither so sacred and profound as his biographer thinks, nor so

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evil as some in their first anger declared. That Thomas Carlyle and Jane Welsh were two people of deep natures, both strong, proud, generous, and sensitive, is most clear; that she had a most acute brain, and he unique genius; that they both vehemently resolved to do their duty in their homes; that both were capable of deep affection; that each had for the other a solid esteem and a keen admiration, deepening perhaps at last into love, and finally, on his side, into a passion of remorse and regret,—all this is clear to all men. Nor is it less clear that their married life from the first day had an unwholesome side; that it was often a kind of torture to one, and sometimes to both; that it was broken by prolonged spasms of jealousy and unhappiness; dimmed by frequent separation, in fact, and by life-long lukewarmness in heart. It is all most plain; he has forced us to stand and listen to his sobs of remorse and pity. It is a cruel story; why can we not be spared? What right or what duty have we to be called in so long after death to sit in judgment on these full hearts beating with such wrath, and poured out with so much hot indignation, to listen over again to the bitter speech, to watch the tragic misunderstanding growing up between two fine spirits that earnestly sought to love and to cherish? Why need we be summoned to the castigation of this posthumous penance? Is it the right of every man who may have written some great books to fling into the street the inner sanctities of his hearth, his wife's letters, diaries, clothes, and marriage bed, his pots and his pans, the rag-basket of his sores, and the scribblings of his ill-humors; calling on men, women, and children to take warning in the name of God's truth and man's shame? And can it be the duty of a friend to whom the revolting office is committed to pour forth this mass of domestic lumber and cast clothing in such quantity that an untrue effect is produced on the reader?

Few are the homes without their skeleton, or the lives that have nothing unseemly within them. And when the skeleton is made to dance before our eyes with wondrous literary juggling, and the unseemly thing is painted by the hand of Spagnoletto or Goya, a moral wound is inflicted on the conscience of men. Let us correct this impression produced by unwholesome art. We have the most certain witness to prove that the married life of Carlyle was not the failure and wreck which these volumes might incline not a few to believe. If it never reached the

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highest and most lovely region of married happiness, and at times came perilously close to married misery, it was in the main the worthy effort after happiness of two just spirits, too much resembling each other to be happy in their own marriage, each perhaps too faulty to be perfectly happy in any marriage. It is a tale of millions of homes, somewhat below the chosen few, far above the actual wrecks — αἶλινον αἶλινον εἰπὲ, τὸ δ' εὖ νικάτω.

What have we to do with this? And yet, perhaps it is as well that now and then the veil should be lifted from the fireside, and from off the human heart of man and wife. It is a mystery that no poet and no romance has ever solved. What depths and infinite windings are there in the heart and life of man! Can we ever hear enough as to the sources of happiness and misery, of love and despair? Do we not learn much when we have the mysteries unbared; when we watch the harsh word and look cutting into the nerves of the other; when we trace the gathering volume of irritation and offense, the wanderings of two hearts, each too proud to speak the little word that would end it all; when we see a good and humane soul blindly groping toward a pit, blundering into undesigned wrong from which certain agony must come? In a book, or on the stage, we follow all this with emotion and almost with delight. In real life it is too horrible, too unfathomable, too humiliating to human nature to suffer us to look on steadily. The real tales of this sort are to be guessed at for the most part. Let us, too, pass reverently, keeping silence even from good words. Such a drama of real life these volumes reveal to us, true and literal, recorded by one of the greatest dramatists in our language, out of things known only to him and to one other. The remorse of Thomas Carlyle is a tragedy more painful than "Œdipus" or "Lear"; it is so homely, photographic, realistic in its incidents. Memory is more potent than imagination; and the memory of one of the most imaginative of modern men is an instrument of terrible power. How a great man and a good woman can torture each other and themselves for the lack of certain humanities, and by reason of certain morbid egoisms,— all this has been told us by a master of literary picturing; a tale clearer to his vision than any beheld in the mind's eye of Shakespeare himself. And oh, the pity of it! that it is one of Shakespeare's kith and kin who thus bares his head in the storm and tears out his own heart for us to see.

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It is not art, this. No, nor truth, nor human nature. It needs must be that offenses come, but woe to him by whom they come.

If it be that such an autopsy of the personal and domestic life of our fellow-men is ever desirable, why, we may ask, need the subject be a man that has written famous books? The great writers are seldom great characters; their homes are rarely examples; their surroundings often unworthy. Their mode of existence is usually abnormal, and they do not, as a rule, triumph over its perils. Exaggeration by themselves and by their friends is almost a consequence of their literary distinction. They lead, for the most part, lives unwholesomely stimulated on one side, and these lives are recorded with disproportioned minuteness and needless coloring. It is true that mankind crave for these over-elaborated portraits; but morality and society in no way gain by satisfying the demand for their manufacture.

Truth! truth! what things are done in thy name, as Madame Roland said of liberty. Because a man has written some very extraordinary books, the world craves to know how the writer of them lived. And so they ransack his drawers when he is dead; and every crude word he ever flung upon paper, or growled out in his sulks, is published to mankind. Even the secret thoughts of his wife, the sentences of grief, anger, misunderstanding, wrung from her in tears in the silence of her chamber, become literary property and go through several editions. What right has any man (no leave given) to publish the innermost wailing of a woman's heart, which she herself kept secret from every eye, even from her husband's? And every scurrilous phrase, calumny, or caricature that ever slipped from the eminent writer is to be added to the literature of our country, in the name of truth and to the eternal confusion of cant. Better cant itself than the washings and offscourings of these pots and pans, where the eminent writer flung the orts of his household.

That "a master of gibes and flouts," the greatest, perhaps, in our modern history, should get into the habit of painting caricatures of every man, woman, and child that ever crossed his path, was bad enough. But to publish all these ill-natured scrawls, as soon as he is dead, is hardly a work of moral duty. This man, we read more than once, is a compound of "frog and viper"; that one is an inferior kind of Robespierre; Macaulay is a "squat, low-browed," "commonplace" object; Wordsworth

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is a "small, diluted man," a "contemptibility"; Coleridge, a "weltering, ineffectual being"; Keats's poems are "dead dog"; Keble, author of the "Christian Year," is a "little ape"; Cardinal Newman has "not the intellect of a moderate-sized rabbit"; "Pickwick" is "lowest trash"; Charles Lamb is a "pitiful tomfool," a "despicable abortion"; the Saturday Reviewer is a "dirty puppy"; Mill is a poor, frozen, mechanical being, a "logic-chopping engine." The most memorable thing about Grote is his "spout mouth"; about Bright his "cock-nose." Gladstone is "one of the contemptiblest men," "a spectral kind of phantasm," "nothing in him but forms and ceremonies."

And this is Truth! Say rather, that it is serving round a famous man's spittoon. If this mere spittle were in truth Carlyle's mind, one would hold it as rancid and as false as any on record. But it is not his real mind. Carlyle, one of the greatest caricaturists that ever lived, got into a mental habit like that with which we see persons afflicted who, under nervous excitement, involuntarily gibber and make faces at strangers. Carlyle was incessantly making faces at everybody. The professional caricaturist (poor devil) goes about the world scrawling on his shirt-sleeve grotesque sketches of everything he sees. And so this master of nicknames jots down his buffooneries wholesale. But all this is really cant, a vile habit, a trick that became his master and not a little disfigures his veracity.

And that other trick of cursing and befouling the entire human race—man, woman, and child, horse or dog, cock or hen, all that cross the Carlylian orbit, are bespattered with a torrent of Ernulphus's cursing, which begins by being silly, and ends by becoming sickening. A maid-servant is never spoken of but as a "puddle," a "scandalous randy," a "sluttish harlot"; a man-servant is always a "flunkey." The valet that brings him hot water and brushes his clothes is a "flunkey of the devil." This uniform brutality toward servants is a very evil sign. People that are always quarreling with those who serve them in their homes have assuredly something wrong with them—ill-conditioned, we say. The world at large is a "dusty fuliginous chaos"; Europe a "huge suppuration"; society a "festering dung-heap," and so on. "I find emptiness and chagrin," he cries; "I can reverence no existing man." "To how many things is one tempted to say with slow emphasis, *Du galgenaas* ('thou gallows-carrion'). There is some relief to me in a word

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like that." Alas! what a melancholy cant is here! A noble spirit, in its musings, fretting itself into a temper like nothing in this world but that of the street Arab or hungry costermonger, whose every sentence contains an oath and names that we only express by a blank. That any human soul could sink to the point of finding pleasure in calling men and things "thou gallows-carrion" is pitiful enough! But solemnly to record it and print it as a typical thought! O Thomas, Thomas, thou wast a rugged, stormy soul in life! But it would be a deep wrong to think this crazy venom, worthy of some literary Quilp, was the truth about thee!

Let us shut up this waste-basket of a great man's spleen; it gives no true picture of his inner nature. As he said himself, "the world will never know my life"; and to his biographer he said, "Forbear, poor fool!" For all the talk about truth and scorn of concealment, there are blanks and reticences and material suppression of important fact. Even in this heap of dirty linen there are things kept covered. It is droll to think what was the line below which outrage, disgust, and public scandal were thought to lie. Thomas Carlyle is strong enough to bear much, and his memory will bear even this. Scores and scores of men that knew him well still walk the earth. They tell us of a generous, hearty, simple man of genius, manly in his bearing, in his happier moods friendly and even dignified. The present writer can remember him in extreme old age, quite a model of courteous and cheery repose, most ready to give, open of access, simple, fatherly, nay, patriarchal. That this venerable and stately elder had had his hours of darkness was indeed most clear. But oh, that, as he said, "his bewildered wrestlings" could have been buried there! We gain nothing new, nothing true in the inner sense. It is like hanging out his old clothes on a waxen image of the man.

What then, in sooth, is the meaning of these strange contradictions? What is the riddle of a nature that seems to have poured forth its last drop only to puzzle us more? Here is a man with poetic gifts of the first rank, a born artist, yet whose art is a perpetual torment to him, having to the last something uncouth and abortive in all its creations. Here is a man with an insight that at times touches that of Tacitus, Bacon, or Goethe, yet whose gift ends in a wearisome knack of caricature. Here is one of the great masters of the English tongue, who

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finally settles into a tiresome mannerism. A man, one would think, of really religious nature, whose religion it is hardly possible to put into words, who with "God," "devil," "hell," and "damnation" as often on his lips as on a carter's, appears now to have denied that any of these had practical effect on human affairs in any literal sense. And so one who has written some of the most powerful books of this century, and deeply stirred the mind of the last generation, has passed away without leaving more than a chapter in the history of literature, without founding anything, leaving behind him to carry on his work two or three men that have just learned to mimic his cloudy jeremiads.

We can all see now that he really, in his heart, believed in nothing. All beliefs, demonstrations, certainties of other people he swept away. There were hundreds and thousands, he thinks, of "greater men than Newton." Everything like a system, a set of doctrines, a few coherent principles, even, was all mere cant, windbags, shams, inanities. The old Hebrew belief was "Houndsditch"; the modern belief in realities was atheism. Carlyle, like Descartes, made a *tabula rasa* of all belief. He then interpreted *cogito ergo sum* to mean, "I think, therefore I am; no one else thinks, therefore all others are shams." But Carlyle, being not a philosopher, but a prose poet, could get no further. Having come out of Houndsditch himself, he hugged the rags of Houndsditch to his dying day round his brawny limbs. The Bible continued to serve him with horrible expletives and apocalyptic tropes. Calvinism had bred in him the moody, dogged, mystical temper of the Cameronian peasant. He flung off the creed, but he kept the temper. Metaphysics, of the Kantian or Hegelian kind, he rejected, also, retaining, unluckily, the key to the cloudland, the *Ich* and the *Nicht-Ich*, the bare idea of absolute and transcendental. Hence Carlyle, rejecting at once all theologies, all philosophies, all syntheses alike, and bound by his very ideal to ridicule the possibility of any theology, any philosophy, any synthesis, was forced into a creed that at last got stereotyped into the simple words, "I believe in Thomas Carlyle; which faith, unless a man keep, without doubt he shall perish everlastingly."

And so it was that a man, by nature of noble sincerity and unselfishness, of keen vision and profound yearning after goodness and truth, came, by the power of a gloomy superstition, to reach such heights of maniacal egoism, such depths of corrosive

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inhumanity, as he and his friends have scattered through these posthumous volumes. And with all this raving about atheists and unbelievers, Thomas Carlyle stands pilloried on the pedestal that he so laboriously framed for himself, as of all modern Englishmen the one most utterly naked of any intelligible belief. For neither he nor his biographer can get any further in any definite proposition than that this earth was tophet, and Thomas Carlyle the only wise man in it. There is not in these volumes one philosophic, religious, or social doctrine — nothing constructive, directing, or fruitful. There is railing, mockery, and imprecation of a truly Gargantuan kind; but what of real, humane, positive, or systematic? Words, words, pictures, tropes, sublimities enough to make the major and the minor prophets; but nothing to hold on to, to work with, or to teach.

It comes out that this flux of talk about devil, hell, tophet, and heaven, is all allegory or image. Thomas Carlyle never believed that the devil really made the cocks crow or spoiled his porridge, or that his good friends and neighbors would end in everlasting fire. No! nor that God specially interposed for him to enable him to finish his chapter or digest his dinner, or that all the petty trifles of his life were the peculiar work of "His unspeakable mercy." All this was cant, trick of irreverent speech, habit of bilious self-absorption, nothing else. The Immensities and Unspeakabilities come at last to this. One might as well say the Brutalities, and the Self-idolatries, and the Utter Nonsensicalities. For at the close of his long life Carlyle found out at last that God "does nothing." An otiose God, then, surveying unmoved "this dusty, fuliginous chaos," is the residuum of all this furious apostrophizing.

Wreck, failure, hopelessness, these are the words that the faithful disciple inscribes on his master's grave. The greatest will and courage cannot help the man that obstinately defies his fellow-men. The grandest literary genius will enable no man to solve *de novo* by his own single insight the problems of philosophy and life. The most passionate yearning after right will not suffice to him who resolves to seek right by the light of his own unaided conscience. And thus the great brain and the fine nature of Carlyle end in an egoism that comes perilously near to mania. No "thinker" indeed he, if by thinking we mean the coherent working out of complex questions to practical results. None but a few literary dreamers even call him thinker. And it

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is not given to poets or to prophets to teach us philosophy, nor duty, nor truth. Nay, the sons of the prophet can do little now but show us how hopelessly their master ended, when he pretended to teach as well as to picture, to astonish, or to stimulate. What a pitiful tale it is!

A grand imagination stinging itself to death, like a scorpion, in its frenzy of self-absorption; a generous heart turned to gall because it had lost its way, lost all hope of finding a way; an "influence," a master of speech, a glorious inciter to great things; an "influence," deeper doubtless than Coleridge, higher than Johnson, but how much lower than the mighty Burke! Let us think of him sadly and kindly, lying amongst the Annandale peasants from whom he came forth and of whom he was ever one. Compare the cruel storms in the life of this lost soul with the serene humanity of those whom he nicknamed atheists. Read the autobiography of Hume, and see how a really great thinker could die, with sweetness, hope, and love in every tone. Or read the memoirs of Gibbon, or the life of Turgot, of Adam Smith, of Condorcet. Or, lastly, compare these fuliginous railings and wailings with the manly, self-possessed, simple story told by the magnanimous spirit of John Mill. They found peace; while the wild spirit that in life covered them with his mockery, went tossing down to his last rest in an agony of scorn, hate, and despair. "Wa, wa," he tells us the dying Frankish King cried, "who is this mighty power which pulls down the strongest?" "Wa, wa," wails Thomas Carlyle, recognizing a power too strong to be resisted. That power is humanity, the human race, which his long life was devoted to deriding, and which now, in his death, still honors him as a brother of rare genius and mighty purpose.

FREDERIC HARRISON.

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THE REUNITED UNION.

ALTHOUGH the last gun in the war for the restoration of the Union was fired nearly twenty years ago, and the dead and buried Confederacy has not since then given any sign of life, we have had a Union rather in name than in spirit. At the close of the period of reconstruction, the Northern States claimed for themselves, and to them was cheerfully as well as prudently conceded, a certain ascendency in Federal affairs other than that of numbers. The Southern States took a back seat in Congress, having no seat at all in any other department of the government. Mr. Carlisle's elevation to the Speakership of the national House of Representatives was a timid step in advance. But even this was rendered possible only by the diversion from sectional politics that attended the discussion of the tariff. The election of Mr. Cleveland to the Presidency sweeps away all sectional distinctions and lines. It brings the South back into the Union and the Administration. It gives it the opportunity, which it ought to embrace, of impressing itself upon the national policy. It invests it with actual power and the responsibility that belongs to power, and bids it show its real character as a political entity and force. On the use it thus makes of its chance for good or ill will depend an answer to the question whether we shall, or shall not, have a revival of sectionalism in our future politics.

As long as the South existed by a species of sufferance, and the North stood at once as the source and resource of nationality, sectionalism — senseless and selfish, insincere and exacting — sprang from the nature of the case, and was inevitable. The temptation it offered to demagogues on both sides of the line could not be resisted. Nothing was easier than the fabrication of campaign material, where the average politician's stock-in-trade consisted of a system of cross-petitions, of indictments

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and rebuttals, of crimination and recrimination. It saved to the Cheap Johns of our public life the labor of research, by substituting lurid inventions and quack nostrums for the legitimate objects of legislation. Thus every act of lawlessness in the South was promoted to an affair of state, and a premium was put upon disturbance. It was an exceeding cold day when an insurrection could not be extracted out of a fisticuff. Treason became a locality. The Senator from Oshkosh played his most sectional trump directly into the hand of the statesman from Eureka, who raked in the trick and returned the lead, and then the two, having saved the country, went peacefully down-stairs to luncheon. It is more than surmised by well-informed persons that a most famous debate between two famous party leaders, who respectively dragged the North and South up and down the aisles of the House by the hair of the head, was, as a witty spectator described it, "a simple matter of gate-money." That half a generation of this sort of shamming should have raised up a real hobgoblin in the fears of people who believed it all in earnest, is not to be wondered at. Indeed, to the extent that these mock-heroics occasionally proposed serious measures and involved thoughtful, patriotic, and conscientious statesmen, they worked a positive injury to legislation and society. But their true character may be best shown by their failure to keep the people apart. In spite of them, national assemblies and convocations continued to be held, and it was found that sectional differences existed only within party lines, and those only in opposing party lines, neither party recognizing any sectional distinctions within itself. To Republicans, disloyalty in the South was limited to Democrats. Meanwhile, religious, commercial, scientific, and professional associations, composed of representatives from every part of the country and from all classes, met and deliberated and adjourned without discovering a lack of homogeneity or any signs of public danger. During six consecutive years the national House of Representatives was Democratic. During two years both houses of Congress were Democratic. The country was slowly but surely preparing for a change of parties. It was making a series of trial-trips, as it were, and it must be owned that its experience proved encouraging, for no ill ensued. On the contrary, the closing in of party lines brought the Republicans to a sense of accountability, and produced a long-wanted poise and balance of power.

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At last the national campaign of 1884 is over, the election contest has been decided, and Grover Cleveland is conceded the Presidency by all parties. He will be inaugurated without resistance of any sort, or from any quarter, on the 4th of next March. Thus, after twenty-four years' absence, the Democratic party will return to power, and after twenty-four years' possession, the Republican party will surrender an empire to its political adversary. The value of this event to ourselves and our system of government is inestimable. It will strengthen the belief in free institutions and popular forms all over the world. It will give a guarantee of stability and order at home to many generations. It is the crowning triumph, among a succession of triumphs, to the wearing qualities of the Constitution and the solidarity of the Union.

Serious and many have been the shocks that the republic has sustained since "we, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity," abandoned the confederation that served a provisional purpose after the Revolutionary war, and entered the present national compact. Unfortunately, the organic law, as it originally stood, recognized an institution that, logically opposed to all for which the Union professed to exist, was sure, soon or late, to strike a blow at its life. The war of secession was made possible by the very virtues of those who framed the Constitution, and arose out of a weak but patriotic spirit of compromise, which shirked questions that ought to have been settled. The overthrow of the Confederacy saved the Union, but it left the Constitution suspended, like Mohammed's coffin, in mid-air. The measures of reconstruction that ensued put a sharp strain upon the republican system, and a disputed Presidential election came nigh turning the victory of the Union into a national disaster. Rescued from ruin by the Electoral Commission, the Government now, for a third time in its history, survives extreme menace and peril, and gives to nations and the ages conclusive proof of its elasticity and power.

It would be idle to deny and foolish to try to obscure the circumstance that the change of parties has come about largely through the instrumentality of the South, which in 1861 withdrew from the Union, and in 1865 was compelled to return to it

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by force of arms. As an isolated fact, this seems strange indeed. It would be stranger still if the real character of the South answered the description honestly believed and maintained by many good people at the North. But in truth it does not. There has been, and there is, a moral no less than a physical revolution in both the old sections of the country. Neither is what it was. In many respects the two are improved in their conditions, political and material, and, there remaining no longer any bar to their perfect union, the lessons of the epoch of misunderstanding and misadventure from which we are emerging will be found not to have been set in vain. Particularly is this true of the South.

The issues that produced secession are all passed away. The men who led the secession movement no longer appear upon the scene. A fresh crop of ideas has sprung up in the South. A new body of public men has come to the front. These were not responsible for the mistakes of their fathers, and, except to be loyal to their fathers' memory and motives, are nowise concerned to defend that which they have no mind to repeat. The North has mistaken a manly and filial sentiment in the South for a covert and treasonable political design. This has been the occasion of a deal of mutual misconception and not a little crimination and recrimination. The South will presently have the opportunity to dispel this error. It will prove itself a conservative bulwark to the Administration, in Congress, in the Cabinet, and throughout the civil service. For the Southern people sincerely love their country. They are true to its free institutions. They feel keenly the stigma that they have been made to bear so long, and their present exultation springs largely from a sense of moral emancipation. At last they think they will be able to give hostages to fortune.

Everybody knows that under the shadow of a belief in the impregnability of the Republican position in the national Government great abuses have intrenched themselves. There being an equal portion of human nature in all political bodies, it could hardly have been otherwise. The circumstances of our last campaign pointed the moral and adorned the tale of these abuses, and the decision that has been reached is the proclamation of a prevailing impression that more danger is to be apprehended from wasteful and dishonest men in office than from men "lately engaged in rebellion." It is a manifesto from

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the people to the people, claiming their own again. It is a decree of judgment against the party that had begun to think itself the state, and a warning to those who are intrusted with power not to misuse it. In short, it is both a civil service order and a restoration of the disunited Union, and upon the sincerity with which this construction is put upon it, and the success with which its provisions, actual and implied, are executed, will depend the length of the Democratic tenure.

The end of the late national campaign was signalized by the extraordinary spectacle of a defeated candidate for President assembling his neighbors and friends about him to hear from his lips a passionate exclamation against all who opposed his election. Denuded of oratorical redundancy and translated into plain English, Mr. Blaine's indictment charged that the result of the contest had been achieved by the union of four Northern States, whose loyalty he did not hesitate to question, with a South made solid by the subjection of its negro population. He asserted that the chiefs of the rebellion had regained possession of the Government by a system of intimidation that made the vote of a white man at the South double the value of the vote of a white man at the North. He declared that this unequal state of affairs raised a question that dwarfed all other questions, and he appealed to the manhood of the North to join him in a movement to avert what he described as a great national danger. He did not specify a remedy in detail, but his general plan embraced a solid North against a solid South, and flatly contradicted the pacific policy laid down in his letter accepting the Republican nomination for President.

The unreasonable character, the half statement and false argument, of the sectional delusion have never been put more sharply and clearly than they are in this splenetic outcry of a beaten aspirant. It ignores the facts of current political history with the most child-like disregard of the popular intelligence. For example, in the eleven ex-Confederate States, casting ninety-four electoral votes, there are only three — Louisiana, Mississippi, and South Carolina — in which the negroes are in a majority, so that if Mr. Blaine's assumption were correct, that the negroes are all Republicans, they could not, had they all voted for him, have given him more than twenty-six electoral votes, or ten fewer than New York threw against him, and four fewer than were given against him by Indiana, Connecticut, and New Jersey. The

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majority of negroes in Louisiana was in 1880 but twenty-nine thousand in over nine hundred thousand, or but three per cent.; moreover, the negro vote was divided there, and there is not a particle of evidence to show that there was any intimidation. If he had obtained the votes of Mississippi and South Carolina, he would still have lost the Presidency by the votes of disaffected Republicans in the State of New York. As to the complaint that the election of Mr. Cleveland rehabilitates the Southern Confederacy by restoring its chiefs to power, it is to be said in answer that none of those who were directly responsible for the secession movement or its consequences, are now upon the stage of public affairs. If there be one, he is Senator Isham G. Harris, of Tennessee, whom the Republicans of the United States Senate proposed, the Democrats concurring, to elect unanimously to the Presidency of the Senate.

After all, however, these are immaterial suggestions, which spring from a querulous temper, and not from any real apprehension or belief; for no man has cultivated close relations with the persons he assails more assiduously than Mr. Blaine himself. The only question he raises that is worthy of attention relates to the actual political condition of the Southern States, and the remedy he proposes of a solid North against the alleged encroachments and power of the solid South. Unfortunately for Mr. Blaine's argument, it is neither tangible nor original. During ten years we had an application of this sectional policy. There was a solid North. Neither Mr. Blaine nor any one else can hope to make it more solid. The Republican party, representing this solid North, had absolute control, and it did whatever it pleased with the South. The Constitution offered no obstacle to the thorough and radical scheme of reconstruction adopted by the Republican leaders. The Southern States were put under the dominion of the black population, organized and led by a few whites, backed by the whole power of the Government. The responsible, tax-paying elements of society were outlawed. In a word, the bottom was put upon the top of the political edifice. What was the result? Interminable conflict, ruinous corruption; a Moses in South Carolina, a Kellogg in Louisiana. The rotten fabric crumbled and fell of its own weight. It was out of nature and out of joint, and it could not exist. Gradually natural conditions prevailed, and ever since there has been a steady increase of prosperity and decrease of

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violence. No civilized community loves crime for its own sake. Nor has the South reached a millennium of peace and quiet any more than the North. But as to law and order, the South can to-day challenge comparison with the North.

Extended to its logical conclusion, Mr. Blaine's argument looks either to the forcible restoration of the negro to rulership in the Southern States, or the destruction of Statehood at the South, and the substitution of provincial forms of government in room of it, with a military governor, a standing army, and martial law for each separate province.

If Mr. Blaine's scheme does not embrace the one or other of these propositions, it has no practical purpose, and his speech may be dismissed as the incendiary harangue of a disappointed applicant for office. In the meantime, it is to be borne in mind by those who seek the truth, that the present relation of the white and black populations of the South is a race, not a political question. In States where the whites are in a great majority, there is no issue at all, and the blacks fare better than they do in any of the Northern States. In the black-majority States, or close States, all issues are decided by race laws. The stronger race will govern; the weaker cannot. The trial was made, and we saw what came of it. Depopulate South Carolina of its whites, repeople it with white men made in the image and in the spirit of Mr. Blaine, and the result will be the same. The savage multitude will assert the power of numbers, the trained minority will meet it with the artifices of civilization, and the savage will go to the wall. Society will find its level somehow, and, until Mr. Blaine can make an African the equal of an Anglo-Saxon, he will not materially change the situation of any community where the blacks outnumber the whites.

The outcry of Mr. Blaine, and the support that a few excited journals have given it, take their origin in partisan arrogance, stimulated by unexpected defeat. It is, in effect, a pretense that the party to which they belong has a prescriptive right to rule the country. It is, by implication, an assault upon the patriotism and capacity of a majority of the people of the United States. In this character it is as great a treason to the spirit of republican institutes as secession was to the Union. If it be true, reconstruction was a blunder and a crime, and the States of the South ought to have been retained as conquered territory, and should be now held by force of arms. If it be

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true, there is a radical, generic difference between the people of the North and the South, which will stand as a perpetual obstacle to real union. It is not true, and Mr. Blaine is a living example that it is not. Born in western Pennsylvania, and receiving his first and strongest impression from Kentucky, he has shown himself the most representative and popular citizen of Maine. During thirty years Mississippi's three foremost party leaders were Northern men: Sargent S. Prentiss, from Maine; John A. Quitman, from New York; and Robert J. Walker, from Pennsylvania. One of the most powerful of the secession leaders, John Slidell, went to Louisiana from New York. The government at Washington levied war against the Confederacy for the restoration of the Union. It succeeded, and, unless it stultified its professions and annihilated the republic, it was bound to rely upon the self-governing capacity and the personal integrity of the Southern people. Its reliance was not misplaced. In the coming years the South will contribute the most conservative elements of political thought and action to the Government. The man who has fought for his country knows only half how to value it. To comprehend its full value, he must have lost it.

Many disappointments will follow the election of Mr. Cleveland, who, if he were ten times a statesman, could not fill the expectation of his supporters. This, however, is merely to say that party reverses seldom realize the fears of the defeated, just as party triumphs never attain the hopes of the victors. Two errors the change of parties will undoubtedly expose. The one that the Republican party is alone qualified to govern; the other, that the South cannot be trusted. The incidents of administration may be left to take care of themselves. The Union is itself again.

HENRY WATTERSON.

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WILLIAM HERSCHEL'S STAR SURVEYS.

"Cœlorum perrupit claustra."—*Herschel's Epitaph.*

AMONG the researches that I should wish to live to see undertaken by astronomers, and especially by the astronomers of America, who have shown so much originality in kindred inquiries, I regard with particular interest the survey of the stellar depths, in accordance with the original ideas of Sir William Herschel, but on principles such as he by no means supposed to be correct when he began his labors. It has been unfortunate for the work of research in this direction, that Herschel's ideas and results during forty years of observation have been dealt with, by astronomers who came after him, as though they had been presented in a single treatise, and indicated his views at some one given time. In a sense, there is something singularly appropriate to the grand subject with which he dealt, in this particular quality of the picture that we have received from his hands. The starlit heavens present a similar diversity in regard to time. We find it difficult, nay, impossible, to conceive that the stars as we see them are not as they actually are, nor even as they were at any given time. We do not see any star in its true place, even after correction has been made for such effects as are produced by atmospheric refraction and aberration of light. For each star is rushing swiftly through space, changing its apparent position in the celestial sphere, and although, owing to the enormous distance of each star, the apparent movement is not perceptible by ordinary eye-sight in less than hundreds of years, yet as light takes many years in reaching us from any star, it remains strictly true that the position apparently occupied by a star is not its real position, but one that it occupied long ago. Again, we do not see any star with its real light at the moment, but with that (by no means necessarily the same, even in amount) which it emitted

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many years ago. Even this is difficult to conceive; but this is little. Each star tells us of its history at a particular time, corresponding to its distance. Yonder bright star shows us its position and luster a score of years since; the less brilliant orb apparently close by, lies so much farther off that we must assign the news it brings us to at least a century ago. But many even of the brightest stars lie at such greater distances; while, when we pass to the fainter stars, we must often have to consider light-journeys of many hundreds or even many thousands of years. If we regard the telescopic view of the heavens as the real view presented to the eye,—at least, to the mind's eye of science,—we must recognize, in the case of the faintest stars seen by the most powerful telescopes, such vast distances that light cannot have come to us from those stars in less than hundreds of thousands, perhaps millions of years. So that the scientific view of the universe of stars has as wide a range in time as in space. We have no picture of the galaxy as it actually is, or even as it was, but of different parts inextricably intermingled, and at different, and very widely different, periods of time.

But science enables us to correct the mistaken idea that in the stellar heavens we see the universe of stars as it is at this very time. Though the mind may never be enabled to conceive the reality, and is, indeed, hopelessly unable even to approach the conception, yet the reason has been convinced long since that the stellar heavens tell the amazing story of vast realms of space and enormous durations of time, which modern astronomy has in part been able to read.

It is not very wonderful, but it is interesting and significant, that the labors of the man that has done most to bring the great problem of the star-depths before us should have been misinterpreted somewhat as we are so apt to misinterpret the heavens themselves. Writers even so able as Humboldt and Arago take statements from this and that part of Sir William Herschel's long series of papers, and set them side by side in the same page, or even in the same paragraph; nay, I have seen such statements wrought into a single sentence, when in reality they belong to entirely different parts of Herschel's process of inquiry, or even present entirely distinct views on the particular matter to which they relate. Although my chief work has long been to try to put myself in the position of those who are apt to make mistakes, in order that I may be the more successful in correcting

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such errors, I had not conceived it possible that so gross a mistake should have been made. Sir William Herschel suggested, in the course of his career as an observer of the stars, two entirely distinct methods of gauging the star-depths. They were so different in character, that — to take but one point of difference — one depended on the use of one and the same telescope throughout, while the other required that a series of telescopes of gradually increasing power should be employed. Yet, not only have superficial readers overlooked the characteristic difference between the two methods, and the reason why one method gave place to the other, but even those that have professedly undertaken the work of analyzing and abstracting the labors of the great astronomer of Slough, have fallen into the same preposterous mistake. I know of only one, Wilhelm Struve of Pulkova, who has clearly recognized and insisted upon the difference between the two systems of space-gauging that were employed by Sir William Herschel at the beginning and toward the close of his marvelous series of observations. Even Struve failed to recognize clearly that Herschel never did more than sketch in outline the results that would have followed from his second method of gauging, interpreted in a way that seemed to him likely to be sound and just. Herschel was too old to do more; and, apart from this, it may be said that he left those who came after him not only to apply the method fully, but even to interpret satisfactorily the few results that he had himself been able to collect.

Every one knows the nature of the system of star-gauging that Herschel at first adopted; in fact, it is the only one about which the great majority of students of astronomy know anything. It was the method suggested originally by Wright of Durham. Supposing all the stars visible in the telescope to belong to a certain system of stars tolerably uniform in size and distribution throughout (our sun being one of them), it is easily seen that if the telescope we use brings into view all parts, even the remotest, of this star-system, we can determine the shape of the system with considerable accuracy. For, in whatever direction we turn the telescope, we shall see a number of stars, greater or less, according as the boundary of the stellar system in that direction is farther or nearer. Wright of Durham applied this method of gauging, with a telescope of moderate power, with results closely resembling those that are presented to this day as among

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the chief triumphs of Sir William Herschel's entire series of labors. Wright found so many stars in the direction of the Milky Way, compared with the numbers seen in those parts of the sky that are free from milky light, that he was forced to assign a much greater extension to the stellar system in the direction of the Milky Way than elsewhere. Forced, at least, when we consider the assumption on which his inquiry had been based; for of course there were several other available explanations of the observed facts. Thus Wright was led to enunciate the theory, commonly attributed to Sir William Herschel, that the stellar system has the shape of a gigantic flat disk of stars, tolerably uniform in distribution. The Milky Way being divided into two streams along a part of its course as known to Wright, it was necessary to assume that the disk was cloven throughout half of its extent.

Sir William Herschel, making a more careful survey on the same plan, but with a much more powerful telescope, found that while in a sense this cloven flat disk theory was supported by the results he obtained, it was yet necessary to assign a much more complex figure to the stellar system, so long as the results of his gauges were interpreted in accordance with the assumptions suggested by Wright. It became clear that on these assumptions the bounding surfaces of the flat star-system were by no means smooth. Instead of a section of the stellar system through its center (near our sun) and at right angles to its median plane being bounded by straight lines, the outline must be of the most irregular form. Herschel drew one of these sections, which presented a shape somewhat like that of a long, dentate leaf. He appears not to have been at all struck by the peculiarities of outline thus presented, when he was considering only a section of the stellar system. It is obvious that a system of stars forming a sort of island universe might be expected to present many irregularities of shape, and a section athwart the middle of such a system might as probably be shaped like a toothed leaf as in any other way.

But as the work of survey went on, Herschel began to find that not only the particular cross-sections, but the system itself, presented peculiarities of form, and that these were related in too special a way to the position of the observer on the earth to be easily explicable as really belonging to the system of stars. Consider, for instance, such a case as the following: Over a

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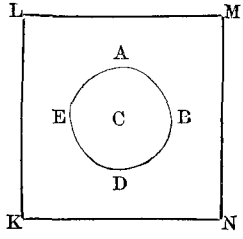
certain region of the heavens, nearly circular, Herschel found that his star-gaugings invariably gave high numbers, while over the region all around this nearly circular space they as sys-



tematically gave very low numbers. Thus, if we suppose A, B, D, E to represent such a circular region, having its center at C, Herschel found that within the boundary A, B, D, E he always had fields of view rich in stars; while so soon as he directed the telescope to points outside of A, B, D, E, he found not more than perhaps four or five stars, instead of hundreds, in each field of view. The meaning of this result—if the assumptions adopted by Wright and Herschel are accepted—is obvious. Herschel himself never hesitated in recognizing this meaning; yet those who quote Herschel constantly, and regard with intense disfavor the idea that he could, under any circumstances, have made a mistake about the stellar universe, overlook the direct result of his observations, the result pointed out by himself and frankly accepted.

If within a small circular or roughly rounded space, such as A, B, D, E, many stars can be counted in every field of view, while over the whole space L, M, N, K, outside of A, B, D, E, few stars are seen, and if a great number of stars seen in any direction indicate a correspondingly great extension of the stellar system in that direction, then, of course, it follows inevitably that the stellar system extends toward the region A, B, D, E very much farther than toward any of the region around A, B, D, E. If the stars over the space A, B, D, E were uniformly distributed, the conclusion would be that a cylindrical projection or rod-shaped extension of the stellar system existed in the direction toward C, the center of this rounded, rich region of stars. If, on the other hand, as Herschel found to be almost invariably the case, the stars, though rich over the whole region

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A, B, D, E, were much more closely aggregated near the center, C, than toward the edge, the conclusion would be that there was a conical projection of enormous length compared with its breadth, having its axis directed toward C. In neither case could the conclusion be regarded as reasonably likely, scarcely even within the bounds of probability. It would be strange enough to imagine a star-system of vast extent, with long cylindrical or conical projections extending from portions of the central group, the extensions being many times longer than the diameter of the parts of the central mass (the cloven flat disk of stars) from which they sprang. Nay, this would not only be strange, but altogether inadmissible when dynamical laws are taken into account. But if we overlook the strangeness and the unscientific nature of such a supposition, we find another and overwhelming difficulty in the peculiarity that every one of these strangely projecting cylinders and cones of stars must be conceived as having its axis directed exactly toward the solar system, from a member of which we make our observations. Our sun is, by the very assumption on which the system of numerical star-gauging depends, but one among millions of suns forming a system of stars. There is no reason whatever for supposing that he lies at the center of the system, or, indeed, that the system is of such form as to have a "center of figure," which, of course, can only exist in the case of a symmetrical system. On the contrary, there are abundant reasons in the complex form and various degrees of brightness of the Milky Way, and in the general superiority of luster found within its southern portions, for believing that the system of stars (if, indeed, the Milky Way represents its richer parts) is exceedingly complex in shape, and the sun eccentrically placed within its limits. Yet, as seen from this casual star—for in looking from the earth we get, to all intents and purposes, the same view of the stellar depths as if we looked from the sun—all the strange projecting spikes of stars (I can think of no more suitable name) are foreshortened into the appearance of round star-clusters! This is absolutely incredible.

There can be no doubt or question as to the significance of the observed facts, if the assumption on which the star-counting method depended is accepted, and it is scarcely possible to entertain any doubt or question as to the absolute inadmissibility of the result thus obtained. If the greater the number of stars seen

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in any field of view, the greater is the extension of the star-system in the direction of those stars, there must be enormous spike-shaped projections of stars wherever clustering aggregations are seen, along the Milky Way or elsewhere; while the existence of such projections, always directed exactly toward the sun, cannot be admitted as possible by any reasoning mind.

Sir William Herschel, at any rate, felt no doubt on the subject. He saw at once, that since the principle he had assumed in the beginning of his star-gauging by the counting method led to a result that was manifestly preposterous, the principle that had seemed so reasonable must be rejected as unsound. Repeatedly we find him saying that a long-continued examination of the star-system has convinced him that the idea of uniformity of distribution, which he had imagined at the beginning, must be given up as inadmissible. He remarks that he has satisfied himself that the stars in the Milky Way are distributed very differently from those in our neighborhood. He understood the real meaning of the clustering aggregations of the stars along the Milky Way, regarding these as manifestly real clusters of stars, not stellar projections.

It would indeed matter little if Herschel had failed to recognize the meaning of what he had himself observed. Had he so failed, we should have found but another instance among hundreds known to us of the inaptitude of even the keenest observers to analyze their observations, and educe the full meaning of what they have discovered. Herschel differed from the rank and file of mere observers—the writing army of science—in the power he possessed in this respect, until approaching the end of his wonderful observing career. But had he in this case failed to reason right—as in later years we find he actually failed—this should in no sense influence our judgment respecting facts that are as clearly before us as they were before him. We know that the assumption he first adopted would compel us to assign to the star-system a shape that is antecedently unlikely even as a shape, and is rendered utterly inconceivable when we take into account the peculiar relation of all its most marked features to the sun. If we saw a number of grains scattered over a surface at random, and found that as they fell they arranged themselves in the form of a star, all the radiations of the star-form being directed exactly toward a certain mark on the surface, we should be absolutely certain that there were

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peculiarities in the surface, differences of level, or the like, which brought about this result. It could not possibly be accidental. We should feel as certain that there cannot be multitudinous radiating streams of stars, all extending straight from our sun, unless there is some special peculiarity in our sun to cause this singular conformation of the star-system. And since we know certainly that no such peculiarity exists, we cannot but reject decisively the belief that the star-system is so shaped. It could make no difference whatever in our conclusion that Sir William Herschel had failed to notice the inference directly deducible from his observations. But, as a matter of fact, the elder Herschel accepted the rich clustering regions along the Milky Way as in reality what they appeared to be, that is, as clusters, not as projecting streams of uniformly strewn stars.

Of course, the principle that he had assumed as the basis of this system of star-gauging—the principle of generally uniform distribution—had to be abandoned in at least these special cases. Probably Herschel was not prepared to admit that it must be given up altogether. This seems much clearer in our time, with our vastly increased knowledge about the stars, than it could have been to Herschel, keen though his insight into such matters unquestionably was.

But Herschel went on at this time with a series of sidereal observations of the widest scope and the most diverse character. He had practically the whole field of stellar and nebular research; the universe was all before him where to choose, a noble but truly a bewildering scene. So far as observational work was concerned, he could hardly go wrong, let him undertake what portion of the survey he might. Again and again he sent to the Royal Society the results of fresh series of observations—now a thousand or so of new nebulæ discovered by him in his "sweeps" of the mighty dome of the heavens; anon the survey of regions containing hundreds of thousands of stars; then an inquiry into the distribution of nebulæ and stars; and all this work went on in company with the observation of sun, moon, planets, and comets, the construction of new telescopes by hundreds, the study of many complex physical problems, and other scientific inquiries of minor importance.

As these labors went on, and clearer ideas of the constitution of the heavens presented themselves, Herschel must have begun to see that the system of gauging the galaxy by counting stars

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was utterly inadequate. With all the various orders of star-clusters and nebulous masses, how could he longer imagine that mere numerical wealth of stars, or of points of light looking like stars, indicated enormous extension in the direction of the line of sight toward such regions? Distance, indeed, he felt to be indicated by the close aggregation of multitudinous points of light. But the vast distance that he recognized in some of these clusters of stars was something entirely different from the long array of stars in particular directions that he had originally assumed as the explanation of great wealth of stars in such directions. His original idea of the structure of the stellar universe had not included the conception of star-clusters, either of the larger sort, such as he had found in parts of the Milky Way, or of the smaller kind, rounded, elliptical, irregular, ring-shaped, and other forms of small clusters, which sometimes he was disposed to regard as external stellar universes, at others as fragmentary portions of our own galaxy.

It was a natural outcome of such observations as these, and of the doubts they inevitably cast on Herschel's original method of star-gauging (or rather of the conviction forced upon him that the principle of that method was untrustworthy), that Herschel should be led to devise another method. I wish specially to show that the method he now adopted was entirely different from the other, insomuch that it is among the marvels of misapprehension that the study of science brings before us that this method should be confounded with the earlier system. But I wish also to show how naturally the new method of star-gauging arose out of the observations on which Sir William Herschel had been engaged since his earlier star-gauging had shown him that the universe of stars is not constituted as at first he supposed it to be.

Let us take the latter point first. Among the nebulæ Herschel had found all orders of what he called "resolvability." Some of them are clusters so coarse in texture that it was not easy to draw a line of distinction between them and the more clustering portions of the galaxy itself. I may notice in passing a feature that was not known to him, viz., that the nebulæ of this coarsely clustering type are more numerous upon and in the neighborhood of the Milky Way than over the rest of the heavens. Others, again, are compact clusters, still easily resolved into stars with a telescope of moderate power. Then

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there are others so difficult to be resolved into stars, that until powerful telescopes were applied they presented the appearance of round or elliptical cloud-like spots. Yet others are still finer in their starry texture, so that only a few of the most powerful telescopes in the world will resolve them into discrete points of light. And lastly, so far as the nebulæ of regular shape are concerned, there are some that have not yet been resolved into stars by any telescope. It is noteworthy that, arranging the nebulæ into classes in the order of their resolvability, those most easily separated into stars show the most marked tendency to aggregation along the Milky Way, and are irregular in shape. Those that come next in order are nearly circular, and though still showing a certain increase of wealth toward the Milky Way, are found in tolerable frequency elsewhere over the star-sphere. The nebulæ that are resolvable with difficulty, on the other hand, are elliptical, and are absent altogether from the Milky Way. These points are manifestly associated with the great problem of the constitution of our galaxy, though not directly related to Sir William Herschel's observations. In fact, though he noticed the remarkable circumstance that the nebulæ cluster near the northern pole of the Milky Way (that is, near the point farthest on the northern heaven from the central line of the Milky Way), he did not recognize the manner in which this peculiarity is associated with the character of the nebulæ, and he supposed that the nebulæ are rich along a ring-shaped region akin to the Milky Way, but at right angles to it, and formed of star-clouds instead of stars.

Recognizing these diversities in the structure of nebulæ, Herschel was naturally led to regard them as due to differences of distance. He supposed the coarser clusters to be the nearer, and the finer in stellar texture to be the more remote. All nebulæ might fairly be regarded, at that stage of the inquiry, as farther away than the stars forming our own sidereal system, even to the farthermost parts of the galaxy. Herschel does indeed speak of the possibility that toward the side of our flat sidereal system, as he viewed it, there might be room for the nearer approach of the parts of a former single great nebula, as though the nebulæ seen clustering in great numbers over the wings, shoulders, and head of Virgo might be but the parts of a former nebula of gigantic proportions. But this notion seems not to have been more than a passing idea with him, or to have

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much influenced the development of his views. The idea gradually gained force, on the contrary, that in the greater or less telescopic power needed to resolve a nebula, or a group of stars, we may find evidence of the greater or less distance of the object so scrutinized. So soon as this idea had taken firm root in his mind, which was not till toward the end of his observing career, he proceeded to put to use this means (as he supposed) of determining distance. I refrain from saying that he put it to the test, for I have no evidence that he consciously did so. He seems to have taken it for granted that the visibility of a star as a separate point of light, by a telescope of given power, was in itself a test of distance. He stated the principle, and showed how it might be applied to stars, star-groups, star-clusters, and nebulæ of various orders; then he proceeded to employ it as a means, first, of measuring the scale on which the stellar system is constructed, then of determining its shape, and lastly, of ascertaining the distances of the nebulæ.

And now to show how entirely distinct was this method of gauging the star-depths from that which Sir William Herschel had before employed. We may call the first method star-gauging by enumeration; the second, star-gauging by resolution. In the first method, the same telescope (a powerful one) was to be applied to different parts of the star-depths, the number of stars counted, and, as the number was greater or less, the limits of the stellar system in the given direction were assumed to be farther away or nearer. What was taken for granted in this method was, first, that the stellar system is formed of stars generally uniform in distribution throughout the system; secondly, that the telescope employed was powerful enough (it was eighteen inches in diameter) to reach to the limits of the system; thirdly, that there are no vacant spaces in the system.

In the second method, different telescopes, ranging in power from the weakest in use to the most powerful he could make, were directed to each region examined, until the whole region had, if possible, been resolved into stars well defined on a black background, without any trace of milky nebulosity. What was assumed in this method was, first, that the sidereal system is formed of stars not differing greatly from one another in size; secondly, that in the various clustering regions throughout the sidereal system the average distances between stars are tolerably uniform, or, in other words, that what may be called the stellar

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texture of each part of the system is the same throughout, though there may be vacant spaces in some parts, and clustering aggregations of various forms in others; thirdly, that any part of the system that the most powerful telescope he employed failed to resolve, lay at a distance beyond the gauging or fathoming range of that telescope. To bring the two methods more clearly into contrast, note that

In Herschel's first method of gauging, it was essential that one and the same telescope should be used throughout the work.	In Herschel's second method of gauging, it was essential that a series of telescopes differing in power should be employed.
The comparisons made related to different fields of view, seen with the same light-gathering powers.	The comparisons made related to the same field of view, seen with different light-gathering powers.
The inference deduced related to the extension along the line of sight of the objects connected with the one telescope employed.	The inference deduced related to the distance of objects seen with the different telescopes employed.

Had Herschel been a younger man when he thought of the second method of gauging the star-depths, it is probable he would have felt from the beginning that the method was one to be tested before it could be trusted. He would have been prepared to find that while, if his assumptions were sound, his results would have such and such a meaning, it was at least possible that his results might show that his assumptions were altogether inadmissible, and therefore that his new method of star-gauging was altogether unsound. But Herschel was nearly seventy-nine years old when he began to employ his second system of star-gauging, and though he still possessed much of his skill as an observer, he had lost much of that versatility of mind which had enabled him not only to observe skillfully, but so to analyze his results as to see whether they were consistent with the assumptions by which they were to be interpreted. Can we wonder if at that advanced age Herschel was content to work resolutely at the task on which he had entered, without considering very closely or thoughtfully the question whether the principle by which he proposed to interpret his results was sound or otherwise? It had seemed to him so reasonable as to appear almost unquestionable; we do not find a line or a word tending to show that he ever questioned it. The principles on which the first method of star-gauging had been based had seemed to him

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equally unquestionable at first; but he had found them to be unsound by noting that his observations interpreted by means of them led to absurdities. The observations made in accordance with the second method of gauging led in like manner, if interpreted by means of the principles on which that system was based, to absurdities. But this, his attention being directed too exclusively to the results themselves, he failed to recognize.

Herschel began this new work of star-gauging by examining individual stars. It is clear that the principle of the method is applicable to a star as readily as to a star-cluster. If we can determine the average distance of those stars that we can just see with the naked eye on a dark and clear night, and stars generally throughout the stellar system have the same mean size (by which I mean that the average for a thousand stars in any one part of the system is the same as for a thousand stars in any other part of the system), then, of course, a telescope increasing the light-gathering power of the eye fourfold will just show a star twice as far away; one increasing that power ninefold will just show a star three times as far away, and so forth. It was by observations made in this way that Herschel was led to the belief that among the stars shown by his most powerful telescopes are some that are thousands of years' light-journey from the earth. Singularly enough, the very evidence that shows in this case that the principle of the new method of star-gauging failed, has shown that the same result can be inferred that Herschel based on that principle. We know now, for example, that many of the brightest stars—as Sirius, Capella, Vega, Arcturus, and Aldebaran—are much farther away than some—as 61 Cygni—that are barely visible to the naked eye on the darkest and clearest night, instead of these being (as they should, if the principle of the new method were sound) fully a hundred times farther off. We cannot, then, any longer assume, as Herschel did, that the faintest stars seen with his largest telescopes, are thousands of times farther away than those forming our constellations. They may be relatively near, and look small because they really are much smaller than their fellows. But while, on the one hand, we cannot now suppose faint stars to be necessarily far away, we are precluded, on the other hand, from inferring that bright stars are necessarily near. Since it is certain that

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many of the brightest among the stars visible to the naked eye are really farther away than many of those that are barely discerned, we may infer, with considerable confidence, that the same holds in the case of the field of view of the mightiest telescope yet made. Now, the faintest stars seen in such a field are those that would be the brightest in fields of view obtained by penetrating still more deeply into space. Among them, therefore, must be some farther away than those yet fainter stars; among them, in fact, are probably stars like Sirius, Canopus, and Alpha Centauri, which owe their brightness to real vastness, and lie at depths remoter than the daring conception even of the elder Herschel has suggested.

But it is when we turn to the study of star-clusters that we recognize at once how thoroughly the principle of the new method of star-gauging was disproved, and how important, nevertheless, are the results that Herschel's observations on the new plan established. If he had found that each cluster, whether in the Milky Way or of the nature of a star-cloud, had been resolved by the application of a certain telescopic power, or of powers ranging between tolerably close limits, he might logically have been content to believe that his principle was sound. An easily resolved cluster would be set relatively near, and one resolved with difficulty would be set far away. But as a matter of fact, he met with a very different result in many cases; and a single case of the kind would have sufficed to dispose of the principle he had adopted. He found clustering regions (rounded in form) that were partly resolved by even his weakest telescopes, and more and more resolved on each increase of telescopic power, until he brought into action his very largest telescope; but even with this instrument, milky nebulosity still remained. This peculiarity would be limited to a certain rounded space, in some cases not so large as the disk of the full moon.* Nichol says of these regions, "What wonder if even Herschel shrank back appalled in the presence of these unfathomable abysms?" Herschel himself spoke less turgidly. He simply says, "When I have been unable to resolve the Milky

* Herschel himself does not dwell on this particular point, though it could not possibly have escaped his attention; but any telescopist can ascertain for himself that all round the "unfathomable" regions noted by Herschel are regions that even moderate telescopic power will completely resolve.

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Way with my most powerful telescopes, it has been because the Milky Way is unfathomable." *

Now, this observation, interpreted by the principle of the second method of star-gauging, leads to precisely the same absurdity to which Herschel had been led by his first method, and still more definitely, though not quite so obviously. All round one of these regions that he found unfathomable, the star-depths were easily fathomed, and therefore in those directions the stellar system had no great extension. But in the direction of these unfathomable regions the star-system had an enormous extension, if the principle of the new method could be trusted. The case is precisely the same as though a surveyor of the depths of ocean found that all over a large area of the sea bottom, save one spot, a few yards perhaps in length and breadth, he reached bottom with a hundred fathoms or so, while at that spot he could not reach bottom with a line of two or three thousand fathoms; except that, marvelous as such a deep and narrow hole reaching straight down two or three miles, but only a few yards across, would seem to the observer taking such soundings, it would be easy to explain, compared with the sidereal phenomenon that Herschel had before him. We can imagine causes for a deep vertical hole in the earth's crust, but we can neither imagine any cause for a straight star-chasm projection of the galaxy in a direction exactly from the sun, nor admit the possibility that such a projection could continue if it had ever existed. That there should be several such projections would be simply impossible, even if we admitted the possibility of the existence of one.

But this result, which thus conclusively proved that the principle of the new method of star-gauging was unsound, established nevertheless a most interesting fact. Since the clustering regions that yielded in part to Herschel's weakest telescopes, but not wholly even to his most powerful instruments, could not

* Struve was led into a singular mistake by this sentence (which I quote from memory, but correctly in essentials). He wrote it out probably in German, "Wenn Ich," etc.; or if not, he simply understood it as if the English word "when" were equivalent to the German "wenn"; for in his "Études d'Astronomie Stellaire" he writes the sentence with the word "Si" for "when," making the statement, which Herschel applied to those parts only of the Milky Way that he could not fathom, relate apparently to the whole of the Milky Way, and suggesting consequently an infinitely extending flat, galactic disk for Herschel's finite one.

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possibly be long, straight, projections similarly constituted throughout their length, it follows that they must be clustering aggregations presenting a wide variety of stellar texture. There must be larger stars separated by wide intervals, stars not so large and separated by intervals not so wide, and stars smaller and smaller in real size and set more and more closely, till even with Herschel's most powerful telescope, they could not be separately discerned. In other words, instead of penetrating more and more deeply into space, as he supposed, he was in reality scrutinizing more and more closely the stellar structure of one and the same region of space.

This variety of feature within clustering regions of the Milky Way would have appeared strange to Herschel (in fact, the idea scarcely presented itself to him), but in our time it appears the most natural thing in the world. The analogy of the solar system, as known to us, suggests precisely such variety of structure in the greater system that Herschel was studying. Analyzed by optical powers varying in range from unaided vision to the keenest telescopic scrutiny yet available, the solar system presents a constant increase of complexity. The eyes see sun, moon, and a few planets; the telescope reveals more planets, some really as large as Uranus and Neptune, but faint through vastness of distance; others nearer than Saturn and Jupiter, but looking faint because small; and yet others associated with the larger planets as dependent orbs; more and more bodies come into view with closer and closer scrutiny of the solar domain; yet portions still remain unresolved, such as the Zodiacal region, where astronomers more than suspect that millions of millions of nerolites and meteorites are traveling around the central orb. With this knowledge for our guidance, it seems as strange to the thoughtful student of the heavens in our time to regard the stellar system as generally uniform throughout in texture, as the diversity of texture that we recognize in the solar system would have appeared to Herschel.

Observations of star-clouds regarded by Herschel as external galaxies, should have led him (and doubtless would in earlier years) to a similar conclusion. It is true that in many of these systems there is an apparent uniformity of stellar texture consistent with the idea that they are formed of stars of about the same size, and strewn with general uniformity through the whole region occupied by the star-cloud. Most probably, indeed,

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the consideration of these features encouraged Herschel in the belief that our own galaxy is similarly uniform in texture. Moreover, in comparing one star-cloud with another, Herschel was not necessarily led to recognize the possibility that, even as one star differs from another in glory, so the nebulæ may differ much from one another in structure, regarding them for a moment as he did, that is, as external galaxies. But there was a simple yet absolutely fatal objection, in the results that he obtained, to the theory that ran through all his work at this time, viz., that not only is the texture of our own galaxy uniform throughout the extent of the stellar system, but the same sort of star-texture exists, with considerable general uniformity, among all the island universes within our ken. Herbert Spencer was the first to note this objection; but it occurred independently to me (it is, indeed, obvious) in 1867, when I had not as yet read a line of his works. That it did not occur to Herschel himself, shows clearly how unready, in his extreme old age, he had become to analyze his results as he had in earlier years. Herschel had found parts of our galaxy unfathomable, which showed that, in accordance with his assumptions, the outermost extensions of the galaxy are beyond the resolving power of his mightiest telescope. But the nebulæ, if they are external galaxies, must lie hundreds of times farther away than the outermost parts of our own galaxy. For each one of them, from its observed size, is known to lie at a distance exceeding hundreds of times its own diameter—that is, the diameter of our galaxy, on the assumption that galaxies are all of about the same size. Thus, then, we have this absurd result, that, whereas parts of our uniformly textured galaxy, at a distance of half its diameter, are irresolvable by the most powerful of Herschel's telescopes, many similar galaxies, hundreds of times farther away—corresponding to the diminution of their light tens of thousands of times—are resolvable with telescopes of much smaller power! Manifestly the principle of the second gauging method fails here again for the third time, and most hopelessly. Whether the star-clouds are external galaxies or not, the principle that Herschel had adopted for their interpretation, and in order to bring them into comparison with our own stellar system, must be given up.

But we know now—I venture to speak of it as certain, though many suppose it to be but a theory of my own—that

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the nebulæ are part and parcel of our own galaxy. Herschel's results went far to prove this, and had he but analyzed them he would have seen as much. Not only does our galaxy differ greatly in texture in its various parts, but it is as varied even in constitution as our solar system, or, rather, it is doubtless infinitely more varied in reality, but presents obviously to us the evidence of only about the same degree of variety. As in the solar system there are large planets and small ones, so in the stellar system there are stars of many orders of real size; as in the former we have streams of tiny bodies, like the asteroids, so in the galaxy we find streams of small stars, as in the Milky Way; as in the solar domain there are meteor-clouds and comets partly or wholly gaseous in structure, so in the great galaxy to which our sun belongs there are clouds of star-dust and mighty masses of nebulous matter (chiefly gaseous), like the Orion nebula.

I may hereafter give a brief sketch here of the evidence respecting the architecture of the stellar heavens already obtained by astronomers. In such a sketch the work of the Herschels would hold a prominent place. I may also show the methods of survey that commend themselves for future employment. My present object has been, first, to show how entirely distinct were the two methods of star-gauging that many who suppose they know something of Herschel's work have hopelessly confounded together; secondly, to point out how thoroughly the application of each disproved the assumptions on which either had been based; and lastly to show how, nevertheless, the results obtained by each method threw useful light on the great problem that Sir William Herschel, first of all men, successfully attacked by observational methods.

RICHARD A. PROCTOR.

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AMERICAN LABOR ORGANIZATIONS.

THE organization of labor is a question of massive proportions; that of labor organizations and their character, aims, and purposes, is one of more distinct and limited boundaries. The first belongs to the domain of speculative, evolutionary, and historical philosophy; the latter must deal with such facts as are accessible to the diligent student and inquirer, with the additional obligation of relating them as comprehensively as may be to a movement which, however vague and indefinite as yet in its proportions and properties, embraces issues fundamental to a just civilization and as broad as the very existence of an equitable social order. Such organizations, as distinguished from the more portentous movements that are prefigured to the mental shallowness of the sciolist who ventures to call himself a thinker, or to the affrighted consciousness of the unreflecting conservative, under the terrible names of Socialism, Communism, or that latter phase of horror, Anarchism, — shadows, all of them, that await only the illumination of free and fair debate to make them lose their more formidable aspects,— are almost entirely a product of that Anglo-Saxon civilization which constantly strives to adjust without revolutionary strain and to achieve without destructive violence and disorder.

Germany, the earlier home of the mediæval trade guilds, is permeated with political socialism. The skilled wage-workers of France are but just beginning to turn their attention to efforts at trade organization. "Chambres Syndical," or trades-unions in the English sense, have but recently obtained a permanent foothold among the artisans of that country. Revolutionary and political aspects are still the most prominent features of French industrial discussion. In Spain, the "Black Band," with its programme of overthrow, is the only one of impor-

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tance. Italy and Austria have witnessed some efforts in the direction of protection and amelioration, but there is no very great or distinctive force therein. Russia is as yet out of this pale; but it holds forces, active or inert, that set it aside from the general drift of the more limited movement to be discussed in these pages. The *Mir** and the *Artel*† are to be considered from another stand-point. Belgium, of all European countries, is the only industrial community that has really taken hold practically of the labor movement and organization as it is understood, spoken of, and written about in Great Britain, the original home of that system of "labor partnership"‡ commonly called trades-unions.

The American student in this field will find no easy task before him, especially if his inquiries have been preceded by anything like an exhaustive study of the English labor movement. In Great Britain, indifference or active antagonism has been quite thoroughly overcome, and the public opinion of the land is at least intelligent, and has some commensurate idea of the issues involved. The British labor organizations have become a power not to be lightly considered. Thoughtful scholars, sympathetic politicians, and aspiring leaders, all alike find it of interest to debate, consider, or affiliate, with the labor movement and its leaders. But in the United States the whole movement has hardly reached the stage of toleration. It seems difficult for the great body of well-meaning, native-born citizens of mature years, who are not of the wage-earning order, to understand how enormous have been the changes in the very frame-work of industrial life, and in the simplest and most primal facts affecting the social conditions in which the wage-workers, especially of the great cities and manufacturing sections of the land, now find themselves, year by year, more and more completely environed. The successful middle-aged American carries within his memory, as a rule, associations as to his own early struggles quite at variance with those that would now wait on him were he about to enter the arena of competition, armed only with such forces as his natural physical powers, partial training, and moderately developed mental capacities,

* The Russian village and land commune.

† The guilds of artisans and workers that exist in all Russian trades and occupations, outside of agriculture.

‡ See Thorold Rogers's "Work and Wages."

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might afford him at this time. Failing to put himself in the other man's place, the matured man of business is almost invariably narrow and unjust in his estimate of the motives and aims of the labor-union organizer. There is also a justifiable feeling against the effort to make metes and bounds in the way of class distinctions.

A little fact passing under my observation will sharply illustrate this. Some years since, while visiting Europe, I made the acquaintance of an American manufacturer. He was an elderly gentleman of great force of character and remarkable business ability. Though a man of the utmost personal kindness, he was absolutely brutal in his hostility to all labor movements. From what he said, there could be no question that he had expended and lost hundreds of thousands of dollars, during nearly fifty years of active business life, in embittered contest with the skilled laborers that he employed by hundreds. Yet he could but acknowledge, as he set forth the grounds of the struggle from his own stand-points, when a deliberate outsider called his attention to the laches he himself acknowledged, that the larger portion would have been wholly avoided by a recognition of the fact that labor was not a commodity to be dealt with as so much pig-iron or bar-lead. Again, he was evidently proud of the fact that his large fortune and extended business sphere had been the product of his own exertions. Indeed, he was the pioneer in, and almost the creator of, a great industry. A few years later the writer met this fellow-traveler again. He had just retired from business, after half a century of constant activity, transferring to his sons his furnaces, forges, and large shops. The value of these was estimated at one million dollars, and he had retired with a fortune of equal amount. In the course of conversation he said that he began life at eighteen on a borrowed capital of twenty-five dollars, employing a younger brother to assist him at the forge. This statement was given in proof of an assertion he was fond of making, to the effect that every man could succeed if he would, in this country, as he himself had done. Setting aside the *non sequitur* contained in the assertion of every man's succeeding, the old gentleman was asked: "What amount would be required nowadays to start a young man in this business, so that he might begin with something like the equality of effort and reasonable enterprise that attended your own earliest venture?"

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The question rather confused our friend, but he rallied in a moment, and with amused frankness acknowledged that, with the appliances and machinery now required, nothing less than a capital of one hundred and fifty thousand dollars would be needed to make even a moderate venture possible. How much is expressed in these two sums, and what portentous changes they imply!

That the direct interests of labor, political, social, economic, and ethical, are becoming a matter of the largest public concern, is seen in the fact that, in some form or other, under one or the other shibboleth, the opinions and attitude of the wage-working "industrials" was the chief anxiety felt during the exciting political contest that has just closed. More positively than ever,—though it may be a question with many whether it has been more wisely,—the interests of labor, as a distinct series of issues, have been the one supreme topic of debate. This is a fact to be hailed with great relief by those who clearly perceive that the only way to prevent anarchy is to drag its possible cause into the forum; that to find remedy for evils affecting the body-politic, or any portion thereof, there must be open debate and amicable consideration. Deep-seated discontent cannot exist without as deep-seated causes. To understand these, we must probe and examine. This, then, is the era upon which we are entering. As a contribution to the greater debate that impends, the following facts and statements are presented, premising, however, that the statistics as to membership, etc., of the organizations under review are, much to the writer's regret, not of that assured authenticity which is required for a complete understanding. This much may be truthfully said of them, that they are within the bounds of fact, that no effort has been avoided to obtain more accurate data, and that they have at least the value of intelligent conjectural and analytical presentation. The difficulty encountered by the writer in his efforts to secure reliable statistics of labor organizations offers a vivid proof of the bitter spirit of antagonism that prevails. The friendly motive with which this information was sought has been acknowledged by all the officers of societies with whom correspondence was had, yet in several of the more important bodies —such as the iron and steel workers, the granite-cutters, or the Knights of Labor—all definite data were refused, on the distinct ground that the publication of their number, funds,

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dues, expenditures, etc., would be the placing of weapons in the hands of employers, to be used to the injury of the trades-unionists. In striking contrast with this is the spirit with which such inquiries are now met in England. The great trades organizations therein, numbering in the aggregate, as represented in their annual congress, a membership of over two million persons, are always ready to give information and to make public the facts relative to membership, funds, expenditures, etc. Of course, they do not make their administrative details or policy matters for public oversight, any more than do the directors of a bank give to the enterprising reporter the reason why they may have refused to negotiate a line of loans. However, diligent inquiry has enabled the writer to present the following approximate table and statements, relating to trades and labor organizations within the United States, in the qualified sense employed in this paper:

Trades Organizations.	*Membership. (o) Official. (e) Estimated.*	*Headquarters.*
INTERNATIONAL BODIES.		
Iron and Steel Workers	42,000 (e)	Pittsburg, Pa.
Engineers (British)	5,000 (e)	New York & London.
Carpenters (British)	7,000 (e)	New York & London.
Typographical Union	11,930 (o)	St. Louis, Mo.
Seamen's Union	7,000 (e)	Chicago, Ill.
Cigarmakers' Union	14,000 (o)	New York.
Coopers' Union	7,000 (e)	Cleveland, O.
Bricklayers and Masons	12,000 (o)	Cincinnati, O.
Granite-cutters	6,000 (o)	Quincy, Mass.
Glass-workers	7,000 (e)	Pittsburg, Pa.
Furniture-workers	9,000 (o)	New York.
Locomotive Engineers	12,200 (o)	Cleveland, O.
Locomotive Firemen	12,000 (o)	Terre Haute, Ind.
Railroad Conductors	7,000 (e)	Not known.
Railroad Brakemen and Employés	18,000 (e)	Philadelphia.
Knights of Labor (Federation)	150,000 (e)	Philadelphia.
International Workingmen's Ass'n	20,000 (e)	San Francisco, Cal.
NATIONAL BODIES.		
Iron-molders	14,000 (e)	Pittsburg, Pa.
Brotherhood of Carpenters & Joiners	7,000 (o)	New York.
Plasterers	7,000 (e)	
Plumbers	3,000 (e)	New York.
Tinsmiths	3,000 (e)	New York.
Laborers (chiefly building trades)	25,000 (e)	New York.
Horseshoers (includes Blacksmiths.)	19,000 (e)	Baltimore, Md.
Boiler-makers & Iron-Ship-builders	17,000 (e)	Not known.

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Trades Organizations. NATIONAL BODIES.	*Membership. (o) Official. (e) Estimated.*		*Headquarters.*
Stationary Engineers	1,700 (e)	..	New York.
Metal-workers	8,000 (e)	..	Philadelphia, Pa.
Ship-carpenters	2,000 (e)	..	Not known.
German Typographical Union	3,000 (e)	..	New York.
Telegraphers, Operators and Linemen	10,000 (e)	..	
Coal Miners, State and National	60,000 (e)	..	Pittsburg and points in different States.
Progressive Cigarmakers	9,000 (o)	..	New York.
Mule-spinners (cotton factories)	5,000 (e)	..	Fall River, Mass.
Cotton Weavers (cotton factories)	5,000 (e)	..	Fall River, Mass.
Silk Weavers	1,200 (e)	..	Paterson, N. J.
Tailors, N. U	18,000 (e)	..	Philadelphia, Pa.
Upholsterers	3,500 (e)	..	New York.
Harness-makers	1,500 (e)	..	Not known.
Paper-hangers	3,000 (e)	..	New York.
House-painters	10,000 (e)	..	New York.
Shoemakers, Lasters, etc	12,000 (e)	..	Not known.
Bakers	2,500 (e)	..	New York.
Brewers	2,000 (e)	..	New York.
There are small trades, locally organized, chiefly in the large cities, whose number is difficult to ascertain, and many of whom are federated with trades assemblies and central labor unions. They may be understated at	75,000 (e)		
The Socialistic Labor Party (American) and the Social Democrats may be estimated at	25,000 (e)	..	Baltimore, New York, and Chicago.
Total estimate	611,530		

The foregoing table is not put forward as anything but an approximate statement of the numbers embraced within well-known labor organizations. Some deductions must be made for those who are members of more than one organization, as are, for instance, many of the Knights of Labor, the "Internationale," or the Socialist Labor party. Probably fifty thousand duplications are thus given. But there are numerous bodies, small in number, perhaps, which should fairly come within the scope of an estimate, but about which so little is known that it is preferable to make no statement. It will not be an exaggeration, however, to claim a practical unity, mainly of the direct trades-union character, of at least six hundred thousand members. Leaving out of the count, then, the agricultural laborers,

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nearly four millions in number, and also the laboring force employed in commerce, stores, and trading generally, the domestic help and the other miscellaneous wage-workers, the following figures will give all the pursuits with which organizations in the foregoing table are in any way affiliated. They are taken from the Federal census of 1880, and embrace those employed in the occupations that have in some sort come to be associated in the minds of economists and students with the term "industrials," as contradistinguished from agricultural, trading, and domestic employments. According to the census, there were employed at wages in mechanical and manufacturing establishments the following: Males above sixteen years, 2,019,035; males below sixteen years, 181,921; females above sixteen years, 531,639:

In mines, males above 16	195,968
In mines, males below 16	24,507
In quarrying, males above 16	38,945
In quarrying, males below 16	728
In petroleum wells, adult males	11,477
In petroleum refineries, etc., males above 16	9,498
In petroleum refineries, etc., males below 16	346
In petroleum refineries, etc., females above 16	25

RAILROAD EMPLOYÉS RECEIVING WAGES FOR MECHANICAL ENGINEERING AND SUCH OTHER SKILLED LABOR.

Trainmen.	Locomotive engineers, adult males	18,977
Trainmen.	Conductors, adult males	12,419
Trainmen.	Firemen, and all others, adult males	48,254
Trackmen.	Layers, repairers, etc., adult males	122,486
Shopmen.	Machinists, adult males	22,766
Shopmen.	Carpenters, adult males	23,202
Shopmen.	Other mechanics and laborers, adult males	43,746
Shopmen.	Miscellaneous day-wage men, adult males	51,619

IN NAVIGATION.

Seamen and others employed in United States waters	55,453
Seamen and others employed in State waters	636
Seamen and others employed on canals	722
Telegraph and telephone employés (about one-fourth females)	18,286
Total	2,932,785

By the foregoing statistics it will be seen that on a moderate presentation the trades-unions and other labor organizations

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embrace fully one in five of the skilled wage-workers engaged in the above-named great branches of industry. This estimate will not, however, cover the ratio of their influence, especially in the large centers of activity. The artisans, mechanics, and laborers that remain without their pale are mainly those employed in the rural districts and the smaller towns, or in those sections and occupations that are but just beginning to comprehend the great changes produced by the transfer of economic forces from an agricultural civilization to one of a more purely industrial character. Such, for instance, are the artisans of the villages, wherein a workman may yet readily pass from being a hired man to a self-employing position; or the operatives in newly opened factory districts like those of the South; or, to come nearer home, of that portion, for instance, of central New York, wherein during a few years past many of the towns and villages have begun their transition from trading-points to factory and mechanical centers. In the larger cities and local centers of industrial life, many of the great trades-unions will be found to have brought nearly every member of the different crafts within their several folds. This is almost entirely true of occupations like the building trades, and of the printers, furniture-workers, etc., in which the laborers are still handicraftsmen, so far as their skill is concerned; or of great pursuits like those of the glass or iron workers, wherein machinery can be employed only as an adjunct to and not a superseder of man and his trained capacity in a given direction. The employments in which protective mutualism finds it difficult to organize effectually, are such as the cotton, woolen, and shoe factories, wherein the use of machinery has made mere human tenders of the operatives employed; or in such industries as the making of garments, wherein light-handed and comparatively unskilled labor, such as that of women and children, embodies the very worst features of an utterly selfish competition, and leaves the workers almost entirely at the mercy of "sweaters" and "middle-men." In other great occupations, like that of mining, the employés of which in England and Scotland are among the best organized, best paid, and most intelligent of wage-workers and trades-unionists, causes are at work within the United States, such as arise from corporate power and monopoly combinations, bringing under one direction the ownership of mines and railroads, transportation and traffic, produc-

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tion and distribution, that have heretofore prevented any effectual protective organization of such labor, and which, in all probability, will continue so to do, until the time comes when society clearly perceives the need of its resuming the functions now exercised by irresponsible corporations.

The table already given indicates the existence of organizations differing in character or method, and presumably, in some cases, in aims also. Those grouped as international unions are, with a few exceptions, confined to this hemisphere, and aim only at trades-union results. The exceptions are the local and national affiliates of the amalgamated engineers and carpenters, bodies whose general head-quarters are in England, and whose membership is almost wholly British. The international characteristics of the others, with such exceptions as are indicated, are designed to cover the workers in Canada, Mexico, the West Indies, and Central America.

The glass-workers, whether they are organized as part of the Knights of Labor or in a separate body, have recently made connection with their fellow-craftsmen in Belgium and England. The international organizations that are something more than protective, and look toward ameliorative or reconstructive processes, as remedies for the acknowledged evils of a merely competitive life, embraced within the table, are the Knights of Labor, the International Workingmen's Association,—whether in the "Red," or Karl Marx mold, or in the "Black," or Bakunine form,—and the Social Democratic party, as shaped by Lasalle originally, and having affiliations with the German socialists on the one side, and the British radicals, of whom Hyndman and Morris the poet are now the leaders and representatives, on the other. It is not proposed to discuss the organization, aims, and character of these latter bodies and movements, as they belong to another aspect of this subject, and should be considered under the more ample field of the organization of labor. But they are widely influencing the opinions of intelligent and organized workmen, and in a marked degree affecting the views of many that are not so classified. It will be found, on close inquiry, that the representative men of the International, for instance, in this country, are quite as often lawyers, writers, followers of professional pursuits, or engaged in commercial occupations, as they are affiliates of the wage-working avocations. The Social Democrats have, also, a considerable admixture of the same social grades, while what is

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herein classified as the Socialistic Labor party seems to be almost wholly related to the wage-working pursuits. It is confined to a few of the large cities. The International is more widely extended, and one of its chief centers of action is the city of San Francisco, in which a monthly magazine, under the title of "Truth," is published. One, and probably the most extreme publication, in English, of the "anarchist" school, is that of "Justice," a weekly, edited by Mr. Tucker.

Another international body with constructive aims deserves more than mere mention, because its organization and movement is of an American character, and proceeds on the lines that seem to be necessary to our political life and republican spirit. The Knights of Labor is a secret but not oath-bound association. It is both federal and national,—federative by the trades and pursuits it brings under its shield, and national by reason of the extent and purpose of its organization. Its international phase is but just budding, having grown especially out of an affiliated trade, the window-glass-workers, and their efforts to prevent a disastrous competition in wages by the importation of Belgium workers. This was met by organizing local assemblies of this trade in England and Belgium. The exact membership of the Knights of Labor is not given; but about four thousand five hundred local assemblies are reported, and as many of them contain from one hundred to several hundred members, it is not an exaggeration to say that they will average about thirty-five members each. The federal character of the body is obtained, so far as developed, by the unity of different trades under the control of separate district assemblies, and by the general organization, under the same form, of mixed and trades assemblies governed by districts formed through civic and local needs. For instance, the window-glass-workers, wherever located, are all Knights of Labor, and the several local bodies are under the direction of their district assembly at Pittsburg. The shoemakers are also affiliated or federated in this way, the largest body being under a district assembly in Massachusetts. The coal-miners in many sections are similarly organized, and so with other trades. Cigarette-makers are generally enrolled in this body. There are many local assemblies of printers, bookbinders, carpenters, bakers, and other occupations, also, not largely related to or connected with trades-unions in the definite sense. Mixed local assemblies are made up of different occupations. All persons that work for a living are eligible to mem-

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bership, except lawyers, bankers, and liquor-sellers. The National Assembly, which meets at cities selected by the assembly preceding, has contained in the last two sessions delegates whose occupations embraced medicine, the pulpit, journalism, teaching, manufacturing, trading, and many of the skilled and prominent trades and handicrafts. The present executive body is more distinctly confined to tradesmen, in the labor sense, than others that have preceded it. The order makes no distinction of sex or race. It is actively pushing its organization among the colored workers, and with the woman "industrials" of the cities. It is opposed to strikes, is non-partisan though political (in the agitating sense), and its platform of principles favors coöperation, though at present there is no distinctive movement in that direction. On the contrary, a spirit of hostility toward such efforts has been developed, owing probably to the active endeavors of the State Socialists, who predominate largely in New York City, Chicago, Cincinnati, and San Francisco. Trades-unionism proper has recently become a more marked element and force within the Knights of Labor, the chief success of which has heretofore been found in taking up and organizing the trades and occupations that are somewhat, perhaps necessarily, neglected by the large trade-unions. The value of the order to the labor movement in the United States is in this direction, and also in the manner in which it compels a recognition of a unity of interests among all grades of laborers. The platform annexed covers with sufficient accuracy the general ameliorative demands of all the labor organizations and of leading representatives.

1. To bring within the fold of organization every department of productive industry, making knowledge a stand-point for action, and industrial, moral worth, not wealth, the true standard of individual and national greatness.

2. To secure to the toilers a proper share of the wealth that they create; more of the leisure that rightfully belongs to them; more society advantages; more of the benefits, privileges, and emoluments of the world; in a word, all those rights and privileges necessary to make them capable of enjoying, appreciating, defending, and perpetuating the blessing of good government.

3. To arrive at the true condition of the productive masses in their educational, moral, and financial condition, by demanding from various governments the establishment of bureaus of labor statistics.

4. The establishment of coöperative institutions productive and distributive.

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5. The reserving of the public lands, the heritage of the people, for the actual settler. Not another acre for railroads or corporations.

6. The abrogation of all the laws that do not bear equally upon capital and labor; the removal of unjust technicalities of justice; and the adopting of measures providing for the health and safety of those engaged in mining, manufacturing, and building pursuits.

7. The enactment of laws to compel chartered corporations to pay their employés weekly, in full, for labor performed the preceding week, in the lawful money of the country.

8. The enactment of laws giving mechanics and laborers the first lien on their work for their full wages.

9. The abolishment of the contract system on national, State, and municipal work.

10. The substitution of arbitration for strikes, whenever and wherever employers and employés are willing to meet on equitable grounds.

11. The prohibition of the employment, in workshops, mines, and factories, of children that have not attained their fourteenth year.

12. To abolish the system of letting out by contract the labor of convicts in our prisons and reformatory institutions.

13. To secure for both sexes equal pay for equal work.

14. The reduction of the hours of labor to eight per day, so that the laborers may have more time for society enjoyment and intellectual improvement, and be enabled to reap the advantages conferred by the labor-saving machinery which their brains have created.

15. To prevail on governments to establish a purely national circulating medium, issued directly to the people, without the intervention of any system of banking corporation, which money shall be a legal tender in payment of all debts, public and private.

It is not to be asserted, however, that compliance with these demands would satisfy. The careful study of the evidence taken in New York last autumn (1883) by the U. S. Senate Committee on Education and Labor, of which Senator Blair of New Hampshire is chairman, will convince one that the larger number of the thinking men in the labor ranks are more or less imbued with such socialist ideas as the Henry George state ownership and control of the land; the Karl Marx assertion of a common property in railroads, telegraphs, and banks, as well as in the land, mines, and waters; or in the Lasalle doctrine of the duty and right of the state to own and organize the great machinery of industrial pursuits, so as to prevent the existence of capitalists as a class and of capitalism as the controlling force in economic life and order.

Another phase of labor organization, and a very marked one, is the tendency toward federation. Early in October, 1884, the fourth annual session of the "Federation of Organized Trades

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and Labor Unions" met in Chicago. Article II. of its Constitution sets forth the following objects:

"SECTION 1. The encouragement and formation of trades and labor unions.

"SEC. 2. The encouragement and formation of trades and labor assemblies or councils.

"SEC. 3. The encouragement and formation of State and provincial federations of trades and labor unions.

"SEC. 4. The encouragement and formation of national and international trades-unions.

"SEC. 5. To secure legislation favorable to the interests of the industrial classes."

Its platform, or declaration of principles, is more comprehensive even than that of the Knights of Labor, but does not differ essentially from that document. It demands eight hours as a day's work; asks for national and State incorporation of trades-unions; favors obligatory education of all children, and the prohibition of their employment under the age of fourteen; the enactment of uniform apprentice laws; opposes bitterly all contract convict labor, and the truck or goods system in payment of wages; demands laws giving the workman a first lien "upon property, the product of his labor"; the abrogation of all so-called conspiracy laws; the establishment of a national bureau of labor and statistics; the prohibition of the importation of alien labor; opposes government contracts on public works; favors the adoption by States of an employers' liability act, and urges all labor bodies to vote only for labor legislators.

This body had representatives, at its last meeting, of the machinists, printers, carpenters, coopers, cigarmakers, iron-molders, lake seamen, masons, granite-cutters, and of local trades assemblies and central unions, as well as of the Knights of Labor. It aims to take the same position in American labor organization that the British Trades Congress does toward labor affairs in that country. Besides this body, which seems to be gradually taking shape as labor's central and national exponent and representative, there are, in all of the large cities, in many important towns, and in some States, deliberative and representative bodies, with legislative powers, in which are embraced many small trades and unions not yet nationalized. The most important of these is the Central Labor Union of New York City, in which nearly one hundred thousand wage-

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workers are represented. There are State assemblies in New Jersey, New York, Pennsylvania, Maryland, Illinois, Missouri, Michigan, Wisconsin, and probably two or three other States.

The whole movement is undergoing a rapid and healthy change. It is coming out of the twilight of separatism into the daylight of united action and public discussion. It has a literature of its own, fugitive as yet, perhaps, but of an extent and character that will surprise those who have made no examination of the subject. There are seventeen monthly journals, published by the executives of as many unions and societies. In addition to these special organs, there is one daily, "The Laborer," of Haverhill, Mass.; and several weeklies, "The Craftsman," the "Labor Tribune," and others, published at Washington and Pittsburg, which are distinctively the organs of the great trades, such as the printers, miners, iron and steel workers, iron-molders, glass-workers, etc. The two great organizations of cigarmakers publish monthly journals, and both are remarkably well edited. The locomotive engineers and firemen issue handsome monthly magazines. The Carpenters' Brotherhood also issues a well-edited monthly. The Knights of Labor issue the "Journal of United Labor." In addition to these and others, there are nearly four hundred weeklies that are in sympathy with the labor organizations in some one or all of their methods. Recently a large number of these papers have formed a "Labor Press Association." They do not use the wires as yet, but by a judicious use of the mails are able to supply one another with a great deal of interesting news, much of it of value as showing the condition of labor, the places where the market is crowded, or the trades in which men are needed. All this has grown out of a feeling that the ordinary press is hostile and presents the action of labor from the point of antagonism. There are four German dailies, one each in New York and Philadelphia, and two in Chicago. There is also a weekly supporting the anarchistic agitation, and a German monthly published in San Francisco. The internationalist organ is the German "Arbeiter-Zeitung" of Chicago, while that of the Social Democrats is the "Volks-Zeitung" of New York.

In this paper only the facts in relation to American labor organizations have been rapidly and perhaps imperfectly outlined. Enough has been presented, though, to show the character and significance of the labor movement, and to show that it is

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essentially peaceful and law-abiding. It is, however, absolutely necessary for the well-being of society itself that a more candid and generous attitude should be taken than has heretofore been held toward what is known somewhat loosely, not to say flippantly, as the "Labor Movement." It must not be forgotten that the men of labor are of necessity the conservators and defenders of order, and that their disaffection must threaten in a serious degree the very existence of the present form of society and civilization. Capital apparently fails to recall the fact that from the ranks of labor come the constable and the soldier, by whose services and sacrifice it is, in the last resort, alone secure.

RICHARD J. HINTON.

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SOCRATES, BUDDHA, AND CHRIST.

WITHIN certain limits, all the grand ethical and religious reforms of history have much the same characteristics. If this sounds like a paradox, it is only to those who are accustomed to believe in history as a continuous rectilinear progress. Unless the course of events runs in cycles, as was the belief of the Greeks, nothing seems truer than the assertion that different epochs have different problems in ascending scales of complexity, or else win successive victories over a constantly diminishing sum of difficulties. But whatever progress is, it certainly is not so much rectilinear as spiral, because humanity advances only by a series of reactions against an ever-pressing environment. If life be defined as the successive adaptation of internal states in correspondence with external changes, each spiritual reform, though with different phases, will present the same species of efforts to break through the narrowing bonds of the material, under whatever name it may be known, whether as fate or nature, theology or science. The moral effort will be made, the advancing forces will be thrown back for a century, only to return in newer armor and under a different standard to the beleaguered town of Mansoul.

The history of all religions is much the same, and so is the history of practical ethics. Religion, which, like philosophy, begins in wonder and awe, always tends to become stereotyped in set formularities; that is to say, it gradually traces forms that excited its worship as the unknown, until by means of dogmas it becomes the known, the explored, the familiar. Ethics, which has its origin in the most ordinary experiences of life and conduct, gradually swells in volume till it becomes identified with all the rules of a transcendental religion. Then some one that does not believe in this apotheosis of ethics leads a revolt against the religious ritual with which it has become

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identified; he cares more to do justly, and to love mercy, and to walk humbly, than for all the gorgeous ceremonial of worship and sacrifice. By bringing back ethics to its simplest elements, he also desires to restore religion to its primitive attitude of wonder and awe; he desires to take the shoes from off his feet in religious veneration, while he mixes with his fellow-beings in the every-day garb of sympathy and affection. When religions are reformed, it is usually in pursuance of an ethical idea of the simplest and most catholic character.

For general outlines, this statement will hold true of each of the three great ethical reformers, Buddha, Socrates, and Christ, though more obviously of the first and last than of the Greek moralist. The religious problem was more present to the mind of Buddha and Christ than it was to Socrates, who had to combat the forces of sophistry, skepticism, and dogmatic materialism, as well as the anthromorphic conceptions of Hellenic religion. But Buddha had a purely ethical mission, besides his antagonism to Brahmanical theology; and Christ combined with his attack on Pharisaism and Hebraic ritual the advocacy of socialistic ideas and democratic championship. Absolutely different as were the local circumstances in the midst of which the three reformers appeared, it is curious to note how many parallel points there were in their lives. Gotama, the Buddha, lived about five hundred years before the Christian era; Socrates, a century later. There is all the difference in the world between Gotama's yellow-clad mendicant monks and Socrates's band of philosophical adherents, while the early Christian disciples possessed characteristics alien to both philosophers and monks. And yet they treat their founder's life and character in precisely similar fashion. While the actual Socrates is depicted in Xenophon's "Memorabilia," the ideal Socrates gains his apotheosis in Plato's dialogues. Historical criticism enables us to distinguish between the Christ of the Synoptic Gospel and the central figure of the Johannian Gospel; and in similar fashion the glorified and wonderful Buddha of the "Lalita Vistâra," the standard Sanskrit work of the northern Buddhists, finds his real and more humble counterpart in the Gotama of the Pati Pitakas.

Socrates has his early mission conveyed to him in the answer of the oracle; Gotama learns to know his task while under the Bo-tree; Christ passes his initiatory ordeal in the

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desert. Christ is tempted of the devil after a long fast; Buddha sustains a protracted conflict with Mara, the Prince of Darkness, before the final victory is gained. Gotama promulgates his doctrine in opposition to the official ritualism of the Brahmans; Christ is the free-thinking reformer, as compared with the dead formalism of the Scribes and Pharisees; Socrates has as his foes sophists, demagogues, and those who accused him of "introducing new divinities." All these reformers refuse to incorporate in their systems any physical or metaphysical theories; all alike start with common topics of every-day life, with parables from nature and apologues of unvarnished simplicity. Socrates finds that Critias, his own pupil, consents to his death; Christ is betrayed by his own disciple; Gotama's Judas Iscariot is called Devadatta. The favorite Phœdo, with whose hair Socrates is playing, reminds one of John, who leaned on Jesus' heart; and Buddha, too, had his beloved disciple in Aranda. There are points in the death-story of Gotama that remind the reader now of Socrates, now of Christ. He dismisses his disciples at Vesâlî, much as Christ sends away his disciples and faces the agony at Gethsemane alone. Not one of the female disciples is near the Master when he is dying, just as Socrates says, "O Crito, let some one lead this woman home," when Xanthippe appears in his prison. "Hearken, ye monks, I say unto you," exclaims Buddha, "all earthly things are transitory." "Strive on without ceasing, watch and pray," says Christ to the chosen three, "lest ye enter into temptation." "Not so, Aranda," says Buddha, "weep not, sorrow not." And Socrates, too, when he has drunk the cup and hears his friends weeping, upbraids them: "What is this strange outcry? Be quiet, and have patience."

It is needless, perhaps, to add the extraordinary resemblance between the subsequent histories of Buddhism and Christianity as religious systems; a fact, of course, to which the Socratic system, not being primarily a religion, can afford no parallel. In later times, Buddha, like Christ, is born of a pure virgin, and becomes a universal monarch. In the course of fifteen hundred years, Roman Catholicism and Tibetan Lamaism, the lineal descendants of Christ and Buddha, have become sacerdotal and sacramental systems; each with its bells and rosaries and images and holy water; each with its services in dead languages, with choirs and processions and creeds and incense, in

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which the laity are spectators only. Each has its idols and relics and symbols, its reverence to the Virgin and Child, its shrines and pilgrimages, its monasteries and cathedrals. In the services of each, the priest reverently swallows a material thing, and believes himself to have swallowed a part of the Divine Nature. Each is ruled over by a pope with a triple tiara, the earthly representative of an eternal spirit in the heavens.*

But we are not concerned here with the subsequent developments, so much as with the main characteristics of spiritual and ethical reform at the time when they were first inaugurated. Whatever else they may be or may not be, all reforms possess one common feature: they are all animated by a pure zeal for humanity as such, divested of all those integuments, metaphysical, theological, or scientific, with which man is forever seeking to cover his assumed nakedness. When man first reasoned himself into the belief that he was naked, then was the beginning of woe, the fall from the primal Eden. For then began the slowly wrought edifices of doctrine, that taught man that he needed adventitious aids to work out his own salvation. He was an atom in a resistlessly whirling stream of fates, a plaything in the hands of jealous and omnipotent gods, a single defenseless unit, against which were ranged the forces of nature and an unseen, omnipresent, supra-mundane realm. Before his imagination were ever looming forces and agencies, unknown, terrific, soul-subduing, with whom he must make his peace by whatever means, on pain of some dim, fantastic, immeasurable punishment. And so come on him the locust army of philosophers and priests and metaphysicians, to eat up every green shoot of natural feeling and simple, unreasoned activity. When the ethical reformer appears, his first effort is to recall man to what he is in and by himself as a single spiritual unit; his second is then to attempt to adjust his relations with those around him; his third, to wage truceless war with the official teachers of the time. He cannot help the polemical attitude, for drastic measures are required; and if he does not attack the established authorities they force on the battle, because they see that their privileges are being threatened. But the opposition attitude is only the necessary consequence, and not the essential element, of the reform. The first step is to enable man to see for him-

* Rhys David's "Hibbert Lectures," p. 193.

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self, and so knowledge, however understood, is the indispensable prerequisite. Then come the simple maxims of charity and benevolence, the simple duties that are the earliest tasks of a man who knows himself, and knows what he has to do. To give sight to the blind, to heal the broken-hearted, to preach deliverance to the captive, and the opening of prisons to those that are bound,—these are the first words of every new gospel. The special circumstances of the case naturally determine the character of the knowledge to be imparted. When Gotama began his mission he was preaching to born pessimists. The one certain fact in the world was its endless misery. Thereon men had built refinement of torture, in the beliefs that accompanied the early Animism of the Aryan race: that the soul passed from body to body in a course of transmigration. It was not apparently a necessary part of the early creed, which taught that man had a soul; at all events, it seems likely that the Aryans learned the doctrine of metempsychosis after their incursion into the Indian peninsula, though we cannot point to the time when they were not Animists. But the vista of future sufferings that was thus opened before their eyes was a burden too heavy to be borne. It is bad enough for the modern pessimist, who limits suffering to the world we know; but the ancient pessimist was in a worse case, when to the present life was added another and yet another worldly existence, in which the dreary drama of torture was to be enacted anew. Further ingenuities were due to the priests with their complicated ritual of sacrifices and bodily mortifications. From this net-work of pains and penalties, it was Gotama's desire to deliver much-enduring man. All suffering, he said, arises from ignorance: "Ye shall know the truth, and the truth shall set you free."

Gotama's measures to secure this freedom were drastic enough. No mortifications in the first place, no such belief in soul as the Brahmanical creed involved, and lastly only such limited credence in transmigration as would allow for the lasting effects of conduct and character. (Karma.) The story that details Gotama's antagonism to self-mortification is picturesquely placed at the very opening of his career. In the wood of Urnvelâ, he is said to have lived in the severest discipline, tongue pressed against palate, holding his breath, and denying himself nourishment. But no illumination came. His body is attenuated by self-inflicted pain, but he finds himself no

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nearer his goal. So he sees that self-mortification cannot lead to enlightenment, and he takes nourishment again freely, to regain his former strength. Now there were five ascetics living in the neighborhood, who were astonished at his persistence in the faith of asceticism; but when they saw that he had deserted the good cause, they with one consent abandoned him as a cast-away. To these, after the victorious sojourn under the Tree of Knowledge, comes Gotama, and preaches to them the sermon at Benares, which corresponds to Christ's Sermon on the Mount. The sequel is told in the "Mahâvagga," I., 6–10 ff.:

"The Exalted One came to Benares, to the deer-park Isipatara, where the five ascetics dwelt. Then the five ascetics saw the Exalted One approaching from a distance. When they saw him, they said to one another: 'Friends, yonder comes the ascetic Gotama, who lives in self-indulgence, who has given up his quest, and returned to self-indulgence. We shall show him no respect, not rise up before him, not take his alms-bowl and his cloak from him; but we shall give him a seat, and he can sit down, if he likes.' But the nearer and nearer the Exalted One came to the five ascetics, the less could the five ascetics abide by their resolution. They went up to the Exalted One. One took from him his alms-bowl and cloak; another brought him a seat; a third gave him water to wash his feet, and a footstool. Then the five ascetics said to the Exalted One: 'If thou hast not been able, friend Gotama, by those mortifications of the body, to attain superhuman perfection, the full supremacy of the knowledge and contemplation of sacred things, how will thou now, when thou livest in self-indulgence, attain such perfection?' Then the Exalted One spake to the five ascetics, saying: 'There are two extremes, O monks, from which he who leads a religious life must abstain. One is a life of pleasure, devoted to desire and enjoyment: that is base, ignoble, unspiritual, unworthy, unreal. The other is a life of mortification: it is gloomy, unworthy, unreal. The perfect one, O monks, is removed from both these extremes, and has discovered the way that lies between them, the middle way, which enlightens the eyes, enlightens the mind, which leads to rest, to knowledge, to enlightenment, to Nirvâna." (Oldenberg's "Buddha," ff. 125–127.)

There is much in this story that runs parallel with the Gospel narratives of Christ. There is the disdain of the ascetic for the mere human being. "The Son of Man cometh eating and drinking, and ye say, 'Behold a gluttonous man and a winebibber, a friend of publicans and sinners.'" There is the contrast with the ascetic John, who came neither eating nor drinking; and there is the justification that wisdom has for her children, "Be ye not of a sad countenance, as the hypocrites." But there is also the further parallel with Socrates: on the one side,

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Antisthenes with the Cynics; on the other, the Cyrenaic Aristippus with the doctrine of pleasure; and half-way between the extremes is Socrates, neither ascetic nor voluptuary, with his counsels of σωφροσύνη (sobriety) and μετριότής (moderation), and his life-long exemplification of the Hellenic text μηδὲν ἄγαν (nothing in excess). In this, as in other matters, the ethical reformer is the true humanist.

The two other doctrines of Buddha that have been mentioned may be taken together, as they both seem to have been formulated in direct antagonism to Brahman metaphysics. The older philosophy recognized Âlman, in the same way that German transcendentalism envisages the self, or Ego, or the consciousness. It was the Âlman, for instance, that made the world, much as the understanding makes the world, according to Kant, or the world arises in consciousness, according even to so empirical a thinker as Mr. Lewes. With this Âlman there was an ultimate fusion of the Brahma, or Word, just as the Neo-Platonic Logos both was with God and was God, and the coalition of the two amounted to the one identical, absolute self-consciousness, as it would be phrased by Hegelianism. From all this verbose and mystical metaphysic Buddha turned away. To him there was no Ego in the sense of an underlying unity of consciousness, no self or soul in the autological or religious meaning of the word. Buddha takes up a position on this question that resembles that of Hume in facing the spiritualistic hypothesis of Berkeley's experience, indeed, testifies to states of consciousness that come and go in quick succession; but where shall we find in experience any testimony to the underlying subject? A seeing, a hearing, a conceiving, above all a suffering, take place; but where is the existence that may be regarded as the seer, the hearer, the sufferer? Everything is changing, is in flux, in movement; πάντα ῥεῖ is a truth for Buddha, as well as for his Ephesian contemporary, Heracleitus.

The object of this disbelief in the identity of the self is very probably theological; there can be no doubt that, once granted the existence of the soul as a separate entity, there is large room for theological dogma with regard to its being, its origin, and its destiny. Provision at once has to be made for securing its sanctity by sacrificial offerings and all the ritual of purification; it is held to be contaminated by the body, which is thenceforward regarded as the prison-house of a diviner being. Its fate in a

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future world affords endless exercise for ingenious combinations of torture and ecstasy, such as have pleased the theological mind in all ages. But the immediate effect of Buddha's negative doctrine is to throw doubt upon the possibility of that transmigration of souls which was so cherished a doctrine among the Brahmans. For if there be no identical Ego, or personality, how can it be conceived to change from body to body? And if transmigration be denied, is not the morality that is fed by belief in a future life largely impaired?

The device of Buddha was to retain the lasting effects of action and character, while he dispensed with the ordinary theory of metempsychosis. This is the doctrine of Harma, or moral retribution, which is in some respects not unlike the modern doctrine of heredity. "Whatever a man reaps, that also he has sown," may be taken as the text of Buddha's teaching on this point; for actions never lose their proper effects, and if there be suffering now, it must be because, either in the present life or in a past generation, there has been sin. Nature, as we should say, never forgives; sin always entails punishment, not by any theological law, but simply by a natural law. The effects of an action go on in ever-widening circles, a long series of results dates, by the mandate of necessities, from some primal source of good or evil act. It is impossible to escape the conclusion that Buddha seems to have intended to impress upon his hearers. "Do not talk about your soul," he would seem to have said, "its history and its dangers; do not relieve yourself of all responsibility for single acts by believing in a self whose purity can be restored by sacrifice and oblation. And do not picture your soul's destiny in future ages. These are problems that do not come within the sphere of practical ethics. Realize this, however, that no single act you do is devoid of consequences that are incurable. If you are unhappy, it is the fault of certain acts in the past. Do not prolong the dreary chain of suffering by fresh sin; learn to get rid of passion and desire; care not so much for the world's pleasures; know that no peace can be gained except by him who feels that life can offer him nothing to tempt his longing, or feed his active ambition. Come unto me, and I will give you rest."

The difference between such teaching and that of Christ is measured rather by the new religious ideas that Christ set before men, than by any large divergence in the strictly ethical

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view. It is true that very different motives for unworldliness are presented by the later teacher. In Christianity the stress is laid upon the necessity of a present duty to be perfect, in preparation for a better world, where there are many mansions; while in the early Buddhism there is the simultaneous recognition that the world is unreal, and that yet there is no other but only Nirvâna. In either case, however, if we confine ourselves strictly to the ethical aspects, the difference is one of degree rather than of kind. The tenets of both are more or less ascetic; the necessity for rest is equally enforced by both; while the restlessness of ambition and of desire are stigmatized in equal terms. Christ told his disciples not to allow themselves to take thought, just as he rebuked Martha for being troubled about many things, and as Paul told his converts to be careful for nothing. And no moralist has painted the workings of lust and passion, vanity and ostentation, more powerfully than is done in the "Sermon on the Mount." The futility of external rites, when desires are as yet unextinguished, is exactly in the spirit of Buddha's diatribe against sacrifice and self-mortification.* In the case both of the Indian and the Christian reformer, the contention is clean against the ethics of theology, the practical outcome being to affirm the sanctity of daily acts, the ineffaceable character of sin, the necessity of pure motives and unselfish desires, rather than the entire annihilation of the present in the view of a stupendous future. Here, too, Socrates has essentially the same lesson. Life, he said, consists not in the abundance of things a man possesses; it is not a continuous grubbing and grasping, an eternal attempt to outdo your neighbor. It is man's duty to get an internal harmony of some kind, a just equipoise of his faculties, so that desire may learn to be controlled by reason. And the same figure is used. Buddha compares the only moral life to a musical instrument, whose strings must not be either too tense or too loose; and similarly the Platonic Socrates, in the first book of the "Republic," compares the just and virtuous man to a musician who will not try to screw his pegs up higher than a rival, but only aim at the just mean.

* In the matter of purity, both make much the same point. "He who looks upon a woman to lust after her, hath committed adultery with her in his heart," says Christ. "The monk that lowers himself to touch a woman's hand with corrupt thoughts, the order inflicts on him degradation," says Buddha.

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The problems of life and thought that Socrates had to face were as different as were the characters respectively of Greek and Indian; and yet the one common note of all ethical reforms, that which we have called their essential humanism, is even clearer in his case than in those of Buddha and Christ. Whatever be the sins and sorrows of humanity, deliverance is only reached by the human being's rising to the full height of his humanity, extending his view to every member of the common family, and carefully eliminating the excessive importance of the supernatural factor and the nameless terror of the unseen and unknown. Just as Christ, in a striking text, told his disciples not to say, Lo here or Lo there, for the kingdom of God was within them, so Socrates turned from the recognized agencies of the supernatural sacrifice and augury and superstitious rites to that inwardness of judgment which is the very essence of the modern view of conscience. "Like a chain of blind men," said Buddha, "is the discourse of the Brahmans; he that is in front sees nothing, he that is in the middle sees nothing, he that is behind sees nothing. What then? Is not the faith of the Brahmans vain?"* This anticipates by five hundred years Christ's rebuke of the Scribes, as "blind leaders of the blind." In smiliar fashion, Plato represented Socrates as discrediting, with bitter irony, the mythology of his country with its crying heroes and lying warriors and adulterous gods. But Socrates is not so much concerned with theology as he is with the scientific and practical thought of the day. The early philosophy of Greece had resulted in the creation of an impersonal nature, which was everywhere dwarfing humanity by the dull iron weight of material necessity and physical law. Especially had the Atomist philosophy of Leucippus and Democritus produced a conception of the Kosmos that reduced everything — life, death, the soul, and the material form — to combinations and dissolutions of primordial atoms. Where, in the ceaseless whirl of warring molecules, could room be found for human thought and will and duty? What, indeed, in this view of things, was morality but convention, as opposed to the drear reality of nature? Right and wrong, good and evil, what were they but the temporary enactment, for base utilitarian purposes, of those states that, in alternate analysis, were themselves nothing but the chance and temporary coagulation of masses of adhering atoms?

* Caukisultanta (Majjhima N.).

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And in close company with materialism came its twin sister, skepticism, expressing itself in the ingenious analysis of the sophists to show that all morality was relative to the individual, and that whatever seemed to a man to be true was true for him. And after skepticism its handmaid, that debasing cynicism which holds that there is nothing new and nothing true, and it does not much matter; and then — last scene in this eventful history — the inevitable pessimist Hegesias ὁ πεισῐ-θάνᾰτος with his Old World plaint that life is not worth living.

It is instructive for a modern age, beset by much the same phantoms, to observe the Socratic procedure. Buddha had declared war with windy Brahmanical metaphysics. Christ would have no discussion with the Scribes on a future state, and referred men back to mundane duties. Socrates professed his entire dissidence with conjectural physics. He had read the doctrines of natural philosophers, but he would have nothing to do with them. Even Anaxagoras, who had made the world depend on intelligence, is rejected by Socrates as soon as he brings in material agencies. For him the pressing problem is man, and ethics the only study. "He would even converse," Xenophon tells us in the "Memorabilia," "about human affairs, asking what was pious and what impious, what honorable and what base, what just and what unjust, what was self-control and what madness, what was courage and what cowardice, what was a city and what a politician, who was the born leader of men and what the proper way of governing them. When men knew these things, he called them free-born and honorable; and when they knew them not, he thought them rightly styled slaves." For the sophists, with their skeptical disintegration of opinions, and their cynical reference of morals to individual relativity of judgment, he had another method of argument. "Which is most characteristic of humanity," he asked, "its endless diversity of opinions, or those stable judgments that are founded on careful comparison of instances and methodical inferences? How shall we define the human being, by his views and notions and fancies, or by his reason and thought?" If opinion leads to difference among men, let thought show in all men its essential identity. In all opinions, let us find the common ground, the underlying unity, the scientific definition; and so shall we base ethics on sure foundations and make logic the instrument to universal truth. Here, as elsewhere, the reformer is the mediator between men,

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the healer of discords, the advocate of unity. He will include in the range of discussion nothing but what has reference to human interests, but he will extend those interests till they include the whole of humanity. If Christ represents the spiritual side of this enthusiasm for humanity, by preaching the common brotherhood of men in view of a common relation to a Divine Father, Socrates represents the intellectual side, by laying stress on the unity of all men in the common ideas of thought and the universal laws of intelligence. The difference between them is not so much a difference of method as the necessity for meeting different problems. Socrates had to cure an intellectual disease, while Christ had to remove the burden of theological intolerance.

Even in logical method, a tolerable parallel might be made out between Socrates and Buddha. Gotama, too, seems to have proceeded by the same maieutic method of dialectics that is usually associated with the name of the Athenian philosopher; and with him, as with Socrates, the interlocutor is generally reduced to simple Yes and No, overcome by the triumphant course of his questioner's argument. The metaphor of the lute has been referred to before, but the story is so Socratic that it may be transcribed in full. Buddha has a conversation with a young man named Sona (Mahâvagga, V., 1-15 seq.), who, after trying ascetic observances to the full, and becoming aware of their fruitlessness, is minded to fall back on a life of enjoyment. The story proceeds thus:

"How is it, Sona, were you able to play the lute before you left home?" "Yes, sire." "What do you think, then, Sona, if the strings of your lute are too tightly strung; will the lute give out the proper tone and be fit to play?" "It will not, sire." "And what do you think, Sona, if the strings of your lute be strung too slack; will the lute then give out the proper tone and be fit to play?" "It will not, sire." "But how, Sona, if the strings of your lute be not strung too tight or too slack; if they have the proper degree of tension; will the lute then give out the proper sound and be fit to play?" "Yes, sire." "In the same way, Sona, energy too much strained tends to excessive zeal, and energy too much relaxed tends to apathy. Therefore, Sona, cultivate in yourself the mean of energy, and press on to the mean in your mental powers, and place this before you as your aim."

The moral of the story is clearly the same as that conveyed by the well-known incident of the aged apostle found playing with a tame partridge. In fact, the method of proving spiritual truth by means of analogies drawn from daily life was common

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to Buddha, Socrates, and Christ. "I will show you a parable," says Buddha. "By a parable many a wise man perceives the meaning of what is being said." And his parables are often drawn from the same sources as those with which we are familiar in the Gospels. There is a parable of the sower, wherein the teacher declares that the seed he sows is faith, and good works are the rain that fertilizes it. There is a parable of a mustard-seed, though with a different application from Christ's. There is a parable of the tares, which in Buddhist terminology is the tirana-grass, so noxious a weed in a rice-field. And there is a parable of the flood that comes down suddenly and carries away the careless sleeper. Buddha's preaching of deliverance is compared to the work of a physician; and an elaborate parable compares the tempter that tries to lure men to false paths, and the deliverer that leads them back to the way of salvation. The following sentences, too, have a curiously familiar sound:

"What men call treasure, when laid up in a deep pit, profits nothing, and may easily be lost; but the real treasure is that laid up by man or woman through charity and piety, temperance and self-control. The treasure thus hid is secure, and passes not away; though he leave the fleeting riches of the world, this man takes with him a treasure that no wrong of others and no thief can steal." "For never in this world does hatred cease by hatred; hatred ceases by love; this is always its nature." "Let us live happily, then, not hating those that hate us; let us live free from hatred among men that hate." "Let a man overcome anger by kindness, evil by good." "Anger, drunkenness, obstinacy, bigotry, deception, envy, self-praise, disparaging others, highmindedness, evil communications, — these constitute uncleanness; not, verily, the eating of flesh." "Neither abstinence from fish or flesh, nor going naked, nor shaving the head, nor matted hair, nor dirt, nor a rough garment, nor sacrifices to Agni (fire) will cleanse a man not free from delusions." "To abhor and cease from sin, abstinence from strong drink, not to be weary in well-doing, — these are the greatest blessing. Reverence and lowliness, contentment and gratitude, the hearing of the law at due seasons, — this is the greatest blessing. To be long-suffering and meek, to associate with the peaceful, religious talk at due seasons, — this is the greatest blessing."

After Buddha had gone, Saripulta (who is the St. Paul, as Aranda is the St. John, and Moggattama the St. Peter of Buddhism) becomes the Prime Minister, and his body-guard are clad in metaphorical armor, such as St. Paul himself described in his Roman prison. The saints are to take earnest

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meditation as their breast-plate, continual mindfulness as their shield, patience as a staff, the Dhamma or true doctrine as a sword, and the insight of apostleship as a gem to adorn their helmet. For it was a battle they had to fight, a victory they had to win, under a leader who had himself gone on in front to show the way.

If the death of Buddha seems wanting in dignity, as compared with the tragic deaths of Socrates and Christ, it is yet not devoid of a certain simple pathos, which almost approaches nobility. Buddha, having looked his last at Vesâlî, journeys on to Kusinârâ, and on the way contracts the sickness that was to terminate his life. Aranda, the beloved disciple, is with him to attend his last hours, and to his ears are communicated the final speeches of the Master:

"'Whoever, Aranda, male disciple or female follower, lay-brother or lay-sister, lives in the truth in matters both great and small, these bring to the Perfect One the highest honor, glory, praise, and credit. Therefore, Aranda, must ye practise thinking, Let us live in the truth in matters great and small.' But Aranda went into the house and wept, saying, 'I am not yet free from infirmities, I have not yet reached the goal, and my master, who takes pity on me, will soon enter into Nirvâna.' Then Buddha sent one of the disciples to him, saying, 'Go, O disciple, and say to Aranda in my name, The Master wishes to speak with thee, friend.' Thereupon Aranda went in to the Master, bowed himself before him, and sat down beside him. But Buddha said to him, 'Not so, Aranda, weep not, sorrow not. Have I not ere this said to thee, that from all that man loves and from all that man enjoys, from that must man part, give it up, tear himself from it? How can it be, Aranda, that that which is born, grows, is made, which is subject to decay, should not pass away? That cannot be. But thou, Aranda, hast long honored the Perfect One, in love and kindness, with cheerfulness, loyally and unwearyingly, in thought, word, and deed. Thou hast done well, Aranda; only strive on, soon wilt thou be free from impurities.' Buddha, shortly before his departure, said to Aranda: 'It may be, Aranda, that ye shall say, the world has lost its master. We have no master more. Ye must not think thus, Aranda. The law, Aranda, and the ordinance, which I have taught and preached unto you, these are your master, when I am gone hence.' And to his disciples he said: 'Hearken, O disciples, I charge ye; everything that cometh into being passeth away. Strive without ceasing.' These were his last words." ("Mahâparinibbâna Sulta," from which Dr. Olbenberg quotes, p. 202.)

So died Buddha, at the age of eighty years, about four hundred and eighty years before the Christian era; and toward sunrise the nobles of Kusinârâ burned his body before the city

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gates, with all the honors that are shown to the relics of universal monarchs.

If all this lacks the solemn interest of Socrates discoursing on the immortality of the soul in his Athenian prison, as it certainly falls far short of the tragic grandeur of Christ dying on the cross, it yet illustrates the calmness with which humanity, to those who can understand its nature and limits, can face its own instant dissolution. The appropriate parallel to these last words of Buddha are the words of Socrates to his Athenian judges, in Plato's "Apology," or Christ's discourse to his disciples at the conclusion of the Last Supper. To Buddha, expecting the passionless tranquillity of Nirvâna; to Socrates, wavering between the alternative that death is the seeing of the happy heroes of the olden time, or else a long sleep and the best of sleeps; to Christ, looking back to a completed life's duty with the confidence that "it is finished,"—there could be no sting in death, no victory for the grave. For humanity creates its own terrors, and it is in the power of humanity to banish them or to rise above them.

W. L. COURTNEY.

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THE INCREASE OF WEALTH.

When some future historian describes the progress of the nineteenth century, he will doubtless be struck by the enormous increase of wealth, especially in the interval between 1850 and the present date. In a single generation the countries of Europe have doubled their capital, while the increase of population has hardly exceeded thirty per cent. In other words, wealth has grown three times faster than population. It was laid down by McCulloch, in 1825, that nations required sixty years to double their capital, except the United States, which doubled in twenty-five years. Probably if society had remained in the condition that it was in when McCulloch wrote, the increase would not have passed his estimates; but the introduction of railways, steamers, telegraphs, etc., has given such facilities for rapid accumulation, that the United Kingdom has doubled since 1845, France since 1856, and the United States since 1864. To observe the increase more closely, let us take the wealth and population of the three countries at various epochs:

	Wealth in Millions of Dollars.			*Population.*		
Date.	*Great Britain.*	*France.*	*United States.*	*Great Britain.*	*France.*	*United States.*
1830.....	16,890	10,656	.....	24,030,000	32,100,000	12,900,000
1850.....	25,800	15,850	8,430	27,200,000	35,700,000	23,200,000
1870.....	34,400	26,200	35,370	31,300,000	37,300,000	38,600,000
1884.....	45,300	41,700	51,670	36,200,000	38,200,000	55,500,000

In fifty-four years Great Britain has almost trebled her wealth; while France has very nearly quadrupled hers; and in thirty-four years the United States have seen their capital multiply sixfold. As these three countries have been the greatest accumulators in recent years, it is worth while to study their simultaneous growth in wealth under very opposite cir-

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cumstances. The average wealth per inhabitant has been as follows:

Year.	*Great Britain.*	*France.*	*United States.*
1830.....	$704	$333	....
1850.....	948	443	$363
1870.....	1,103	703	916
1884.....	1,249	1,092	931

Notwithstanding the calamities of war and phylloxera, France has accumulated more rapidly than Great Britain; but since 1850 the population of the United Kingdom has risen thirty-three per cent., against seven per cent. in France. Moreover, Great Britain has sent out just 6,000,000 emigrants in that interval, of whom 2,100,000 have gone to British colonies, to create new centers of wealth, industry, and commerce, in close connection with the mother country. When these considerations are taken into account, it will be found that the accumulations of the British people have been equal to those of the French. It is manifest that when population increases rapidly, as in Great Britain and the United States, however prodigious the increase of wealth, there may be only a trifling rise in the ratio per inhabitant. Thus we see that the United States have been doubling capital in twenty years; yet the average per inhabitant is only fifteen dollars higher than in 1870, while the rise in France has been almost four hundred dollars a head. It would be easy to prove, nevertheless, that the advance in the United States has been healthier—a fact that few Frenchmen will deny. A country progressing at once in wealth and population must be prosperous, whereas one increasing only in either must be the reverse. In France, wealth accumulates; in Russia, population. If France grew men faster and wealth more slowly, and Russia the reverse, it would be better for both. The annual accumulations since 1830 show as follows:

	Millions of Dollars.			*Dollars per Inhabitant.*		
Period.	*Great Britain.*	*France.*	*United States.*	*Great Britain.*	*France.*	*United States.*
1830–50.....	446	260	....	17	8	..
1850–70.....	430	520	1,350	15	14	44
1870–84.....	780	1,107	1,164	23	29	25

In forty years, ending with 1870, the average accumulations in the United Kingdom showed little change, unless indeed a

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slight decline after the adoption of free trade and more general use of steam locomotion. We must, however, make allowance for the Crimean war, which cost England $350,000,000, and the effects of the cotton famine, which were far more injurious. But how are we to explain an average increment of twenty-three dollars a head in the fourteen years ending with 1884, the period in which we have heard so much of trade depression, falling prices, and commercial loss? Have these complaints been imaginary, or is the increase of wealth fictitious? On this point there is no room for doubt, seeing that the income-tax returns have risen since 1870 from £445,000,000 to £585,000,000, an increase of thirty-two per cent. We are still as far as ever from explaining the causes of such unexampled prosperity. Some may ascribe it to the Franco-German war, or the Suez canal; others to the board schools, or the increased production of coal; others to the greater industry or thrift of the people. But I am inclined to think it is due to the increase of British shipping, British banking, and British colonial industries. The shipping of the United Kingdom (without the colonial) has risen in late years as follows:

Year.	*Vessels.*	*Tons, nominal.*	*Tons, carrying-power.*
1850.....	25,984	3,565,000	3,950,000
1870.....	22,180	5,691,000	9,720,000
1881.....	19,311	6,490,000	18,110,000

The carrying-power* almost doubled between 1870 and 1881, although the nominal tonnage had risen but slightly. Hence we find that in 1881 the British flag carried 63,000,000 tons, out of 129,000,000 tons of sea-borne merchandise. In fact, the carrying-trade of the world is passing into British hands. Great Britain's banking has grown as fast as her shipping. In 1850 she had £260,000,000 of bank capital and deposits, which rose to £840,000,000 in 1882, the average for the latter year being £23 per inhabitant, against £10 in 1850.

The British colonies have powerfully helped to enrich the mother country. Their commerce (without counting India), which was £153,000,000 in 1870, at present reaches £270,000,000, and the amount of British capital profitably invested in Aus-

* Carrying-power allows steamers to count five for one, as it is found they can make three long or eight short passages for one of a sailing-vessel.

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tralia and Canada is known to exceed £400,000,000 sterling. The subjoined table shows the amount of British wealth under the principal items:

	Millions of Dollars.			*Dollars per Inhabitant.*		
	1840.	1870.	1882.	1840.	1870.	1882.
Land.....	8,400	9,400	9,400	323	301	263
Cattle, etc.....	1,900	2,400	2,070	73	77	58
Houses.....	3,850	8,100	11,400	148	258	320
Railways.....	165	2,650	3,850	6	85	108
Shipping.....	115	330	600	4	11	17
Bullion.....	305	590	715	11	18	20
Merchandise ..	350	1,300	1,750	13	43	49
Furniture	1,950	4,100	5,700	75	133	160
Loans.....	1,150	3,000	5,300	44	97	149
Sundries.....	1,965	2,530	2,815	76	80	79
Total.....20,150	34,400	43,600	773	1,103	1,223	

France is equally remarkable for the industry of her population and their extreme thrift. The yearly accumulations averaged $8 a head before the Second Empire, $14 during the reign of Napoleon III., and $29 since the disaster of Sedan. The capital wealth of France is much less than that of either Great Britain or the United States, and it would be easy to show that the annual earnings of the people are in like manner less; yet, during the past fourteen years, Frenchmen have saved, per head, more than Englishmen or Americans. This is a phenomenon deserving the study of economists both in Europe and America. Without pretending to explain it, I may call attention to some facts. The ascertained wealth of France is arrived at by comparing the death-rate with the amount of assets proved in the Legacy Court. If, by any chance, the rich people have died faster than usual, and the poor less rapidly than usual, since 1870, we should be overestimating the national wealth. But there is no ground for such a supposition. If the government valuation of landed property be excessive, it would likewise disturb our calculations. There is, however, little room to suppose that the whole nation would tamely submit to pay duties on an exorbitant valuation. But while we admit that the official value is correct, we discover an increase of $5,000,000,000 in the value of land since 1852, which accounts for one-fifth of the total accumulations

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since 1850. This is not an imaginary increase of wealth, for the market value of the land has risen in the interval as follows:

	Value in dollars per acre.	
	1852.	1881.
Vineyards	120 to 196	180 to 280
Meadow	180 to 260	240 to 330
Tillage	100 to 180	140 to 240

Another item of increase is railways, which in 1860 represented a value of $850,000,000, and in 1883 exceeded $2,550,000,000. This accounts for $80,000,000 a year. Houses form another valuable branch of savings. Paris, for example, has built $530,000,000 worth of new houses since 1860, and the average increase of house-property in France is officially estimated at $160,000,000 per annum. If we compare the wealth of France and that of the United Kingdom in 1882, we find them as follows:

	Millions of Dollars.		*Dollars per Inhabitant.*	
	France.	*United Kingdom.*	*France.*	*United Kingdom.*
Land	14,930	9,400	393	263
Cattle, etc	1,960	2,070	50	58
Houses	9,500	11,400	250	320
Railways	2,550	3,850	66	108
Bullion	1,520	715	40	20
Movables	5,600	7,450	147	209
Sundries	3,640	8,715	96	245
	39,700	43,600	1,042	1,223

None of these valuations include mines, because the mineral is of little value until it is placed above ground. It has been estimated that the peat of Irish bogs, at ten cents a ton, would pay off the national debt of Great Britain. The salt contained in the English Channel is of still greater value, but can hardly be counted as an item of national wealth, although England derives some income from this source.

When we turn to the United States, we find a country of unlimited resources and great industry, yet the annual accumulation is not much more than in the United Kingdom. In fact, if Ireland were excluded, the savings of the British people would reach £5 per head, precisely the same as in the United States.

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This is at first disappointing, for we are naturally predisposed to imagine that there is in the United States more affluence, a greater margin over cost of living, than in the crowded island of Great Britain. It is true that from 1850 to 1870 the yearly accumulation averaged $44 a head, notwithstanding the terrible devastation caused by the war. But in future we cannot expect to see savings exceed $25, for the Americans seem less disposed to accumulate than to enjoy wealth. If we consider the Union under four great divisions, we find the progress of wealth as follows:

	Millions of Dollars.			*Dollars per Inhabitant.*		
	1860.	1870.	1880.	1860.	1870.	1880.
New England.....	1,925	4,200	4,935	610	1,202	1,235
Middle States.....	4,320	12,570	16,420	525	1,290	1,430
South (13)	6,110	3,680	4,415	595	325	290
West (14)	6,975	14,920	21,710	730	1,060	1,140
Total.....	19,330	35,370	47,480	615	905	940

In 1860 the New England and Middle States had thirty-two per cent. of the capital of the Union, whereas they now have forty-five per cent. In the same interval the West has risen from thirty-six to forty-six per cent. If we examine the accumulations of the past thirty years, we find as follows:

	Millions of Dollars per annum.			
States.	1850–60.	1860–70.	1870–80.	*Thirty years.*
New England.....	75	227	74	125
Middle.....	199	825	385	470
South.....	341	*	74	57
West	478	795	679	650
The Union.....	1,093		1,212	1,302

The decade ending with 1880 saw the accumulations of the New England and Middle States decline more than half, while those of the Western States kept almost uniform. In the whole term of thirty years, the Union has averaged a little over $1,300,000,000 yearly, of which exactly half corresponds to the Western States. Comparing the annual accumulation with population, we find the average per head as follows:

* The Southern States lost $2,430,000,000 in this decade.

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	Dollars yearly per Inhabitant.			
States.	1850-60.	1860-70.	1870-80.	*Thirty years.*
New England	26	68	19	38
Middle	27	92	35	51
South	37		6	5
West	62	66	41	56
The Union	41	46	27	35

Here we see the reverse of what is taking place in England; the wealth of the country, or at least the power of accumulation, is tending westward, to the prairies, whereas in England the agricultural capital and farming interests are every year diminishing. Poetic writers are in the habit of telling us that agriculture is the basis of all wealth, that the plow is the emblem of prosperity; but these sentiments must be received cautiously. It would seem to be in the interest of every nation, and of mankind, that the agricultural or pastoral element should not predominate, but rather the commercial. Merchants are the best statesmen, and mercantile communities the most prosperous and enlightened.

In the meantime the accumulation of wealth goes on from day to day. The American adds seven cents daily to the public fortune, which means that the United States are nearly $4,000,000 richer at sunset than they were at sunrise. The accumulations of Europe and the United States make up $11,000,000 daily, and the increase of population, that is, the excess of births over deaths, is 11,000; so that for every new-comer into the world there is an addition of $1,000, to provide for his necessities.

As a natural result of the increase of wealth, the material condition of nations is improving; not only is the average consumption of meat, coffee, sugar, etc., rising all over Europe; not only are gas and water supply extended to minor towns and villages; not only do the savings-banks of Europe show a steady increase of deposits amounting to $110,000,000 yearly; but all the appliances of civilization are multiplied; new harbors and light-houses are constructed for the common benefit of mankind; as if nations in becoming richer also became more generous, more mindful of the golden precept, "Let no man live for himself."

MICHAEL G. MULHALL.

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THE EVIDENCE OF THE SENSES.

THE senses being the only avenues through which we derive our knowledge of the material world, we are prone to place implicit reliance on their indications, to overlook the part that reason and intelligence play in the interpretation that the mind puts upon the phenomena presented. Indeed, our intuitive interpretations of physical manifestations are generally mistaken for the indications of the senses themselves. Apart from experience, reason, and intelligence, it is very questionable whether the indications of the senses would convey to us any useful and substantial information. The organs of sense were never, in fact, designed by nature as instruments of scientific inquiry; they were never intended to give us direct and accurate information in relation to the physical qualities of matter. These gates of knowledge are always open; but we are not the passive recipients of knowledge. The fable of Proteus is a true picture of the combat between man, eager for knowledge, and the stubborn guardian charged with the preservation of the secrets of destiny. The sea-god changed himself into various shapes before speaking, and yielded only to the hero who, far from being moved by his transformations, bound him with bands of increasing pressure. Such is nature herself; her answers are always true; but, before allowing truth to shine forth, she arrays herself in the garments of error, or hides herself behind the phantoms of illusion, and will only assume her proper shape under the determined pressure of a resolute disciple of science.

When a question arises as to any matter of fact or appearance, what is more common than the observation, "Must I not believe the evidence of my senses?" And yet, no evidence is more misleading and fallacious, and there are no witnesses that require more careful scrutiny and more strict cross-examination

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than these very senses. It is true that in some particular applications of them we are compelled to take the testimony, as in our courts of justice, for what it appears to declare. But in any case of doubt, the senses are the most fallible guides that can be selected.

Notable illustrations are afforded by the indications of sight, the sense that is supposed to afford us the most precise and accurate knowledge. All are familiar with the phenomena that accompany the rising and setting of the sun and moon. The impression produced is that of an apparently large orb, vastly larger than when it is near the meridian. Yet nothing is more certain than that the real apparent magnitude of the sun and moon when near the horizon is not only not greater, but, if we adhere to the strict limits of truth, is in fact apparently less than when they are higher in the firmament.

Let any one adopt any convenient method of measuring the apparent magnitudes of the sun or moon in the horizon and on the meridian, and they will be found to be sensibly the same. This may be accomplished by extending two threads of fine silk parallel to each other in a frame; place them in such position, and at such a distance from the eye, that when presented to the sun or moon, in the horizon, they will exactly touch its upper and lower limbs. Let this arrangement be preserved until the sun or moon has risen to the meridian, and then let it be viewed in the same manner. It will be found that the threads will equally touch its upper and lower limbs, and their interval will still measure its apparent diameter. Astronomical telescopes are provided with a system of parallel wires, by which observations of this kind can be made with the greatest accuracy, and the application of this more refined method of measurement leads to the same conclusion.

We can scarcely call this an optical deception, for these very experiments prove that the eye is not deceived; the visual angle in both cases being precisely the same, the size of the image on the retina must have been the same. In fact, in the case of the moon, it is obvious that since she is nearly four thousand miles farther from us when she rises or sets than when she passes the meridian, her apparent diameter in the horizon, instead of appearing greater, ought to appear about a sixtieth part less than when on the meridian. This conclusion has been verified by refined methods of measurement.

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Gassendi, a distinguished disciple of Galileo, thought that as the moon is less brilliant in the horizon than in the zenith, the pupil of the eye is opened wider in looking at it in the former station, and that it is for this reason that we see it larger. But for this conclusion to be valid, it would be necessary that variations in the openings of the pupil should produce variations in the dimensions of the image on the retina. This notion is wholly at variance with the principles of optics, which assure us that the size of the image produced in the eye is the same to whatever extent the pupil is dilated or contracted. The error is evidently one of the interpreting mind, and not of the sense of sight.

When objects are beyond a certain moderate distance from the eye, the size of the image on the retina has very little to do with our estimate of their apparent or real magnitude, unless we have reason to believe that the objects whose apparent dimensions are compared, are at the same distance from us. A child two feet high, at the distance of one hundred yards, presents the same apparent size to the organ of vision—subtends the same angle—as a man six feet high at the distance of three hundred yards. Yet no one would mistake the one for the other, however different their absolute distances. In all such cases our estimate of size is the result of a complex mental operation, in which allowance is made for the influence of distance. If circumstances are such that we can form no just estimate of distance, we are liable to be misled. In the case of terrestrial objects, our estimate of distance — and, of course, of size — depends in a great measure upon the number of intervening objects. The dilated size of the sun or moon when seen in the horizon is an illusion of the judgment, in which we estimate the distance of the orb to be much greater, because there are terrestrial objects interposed. Aloft we have no associations to guide us; its isolation in the expanse of the sky leads us rather to undervalue its apparent magnitude. Other considerations besides the interposition of objects enter into the complex mental operations on which our judgment of apparent size is founded; but all of them seem to be related to our estimate of distance. For example, a smoky condition of the atmosphere, by rendering the rising moon much less brilliant, enormously enlarges her apparent size; for, in this case, the obscuration of her brightness is associated with greater distance.

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Again, the impression we obtain of the convexity or concavity of bodies is not the result of direct visual perception. There are optical instruments (pseudoscopes) in which objects that are really convex appear to be concave, and *vice versa*. Indeed, the art of painting is in great measure based upon the imperfection of the information conveyed through the medium of sight. This is particularly true of landscape painting. The luminous diverging lines occasionally seen in the air toward sunset, in a sky full of partially broken clouds, sometimes termed "the sun drawing water," are in reality parallel. They are, in fact, sunbeams through apertures in the clouds, partially intercepted and reflected by the dust and vapors suspended in the atmosphere. Sometimes they may be seen to diverge from a point near the western horizon, and to converge toward an opposite point in the east, in a manner analogous to the meridian lines on a terrestrial globe. This apparent deviation from parallelism is the result of the laws of perspective. A similar phenomenon, arising from the same cause, is sometimes presented by parallel bands of fleecy clouds.

In this view of the subject, we certainly cannot be said to see directly the position of a body by a simple effort of sight. By means of the eye we gather a variety of data, which are submitted to a rapid mental analysis. When the body is near, the differential qualities on which our judgment is based are substantial and obvious, so that he who runs may read. As the distance increases, the calculation grows nicer; only a careful scrutinizing eye will notice the delicate touches in outline, proportion, or shading, on which the problem hangs. At still greater distances, it is impossible for any eye or any mind to divine the true position and distance. When this limit is reached, our decision is held by so weak a tenure that the slightest adventitious circumstance, such as the intervention of objects or the greater or less brilliance of the bodies, determines our judgment.

There is another illusion belonging to sight, examples of which may be found in daily experience, which, nevertheless, I have not seen as minutely analyzed as might be desirable. I refer to the apparent motion of a body at rest, and the converse. In both cases the apparent motion is invariably in the opposite direction to the real motion. In the case of the rotation of the earth upon its axis from west to east, we imagine ourselves to

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be at rest, while the sun and other heavenly bodies appear to move from east to west. To the passengers on shipboard the shore appears to recede as the ship leaves the land. In like manner, to one riding rapidly along a road, the trees seem to move backward.

On the other hand, if we are in a railway car that is in a state of rest, the motion of a train on an adjacent track is transferred, in our conception (in an opposite direction), to the car in which we are seated; and if the passing train is long, the feeling of uncertainty becomes heightened, and sometimes almost painful. Similarly, if, while we are standing upon the edge of a wharf, a large ship gradually approaches us, as soon as she gets sufficiently near, the motion of the ship is apparently transferred to the wharf; and the impression is so powerful, that most uninitiated persons will absolutely stagger. In like manner, when the external covering of an observatory, consisting of the cylindrical sides and hemispherical dome, is made to revolve while we are within, the motion is almost invariably transferred to the platform upon which we are standing.

The following explanation, which was, I believe, first suggested by Professor Joseph Henry, in 1849, will be found to embrace all possible cases: By long experience, extending back to the period of early childhood, and possibly inherited from untold generations of progenitors, the mind has acquired the habit of inferring, without reflection, that when two bodies are relatively in motion, the motion belongs to the smaller, and that the larger is at rest. This inference is probably inseparably associated with the equally early experience, that it is more difficult to set a large body in motion than a small one. It is not necessary to the effect that one of the bodies should really be the larger, but that, at the time, it should occupy a larger portion of the field of view. Moreover, in order to secure the result, it is absolutely necessary that all concomitant circumstances, unconnected with apparent size, that influence our judgment of the direction of motion of bodies, should be removed. Thus, there must be no fixed objects intervening or visible beyond the body observed, as they might enable us to correct the impression. When these conditions are fulfilled, I believe it will be found to be a universal law that apparent size determines to which of the bodies the motion is referred, on the principle that the apparently smaller body seems to move.

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In the apparent diurnal motion of the heavenly bodies from east to west, produced by our actual motion from west to east, the earth seems to us vastly larger than any body exterior to it, and when motion is observed, we insensibly transfer it to the apparently smaller bodies. It is in vain that reason and calculation combine to assure us that the sun is more than a million times the bulk of the earth; he occupies but a comparatively small portion of our field of view, and, in spite of the deductions of reason, he seems to us much smaller than the earth, and we transfer the motion to him. In like manner, in the apparent recession of the shore from an observer on shipboard, the objects on land occupy a much smaller portion of our field of view than the ship on which we are standing; and therefore, in accordance with the principle, our motion is transferred to them. The same is evidently true in relation to the apparent backward motion of the trees in riding along a road.

This principle is equally applicable to the opposite class of phenomena. Thus in the case of the train of cars: the train on the contiguous track is so near to us that all external fixed objects are excluded from our view; and as it occupies a larger portion of the field of view than the car in which we are seated, we imagine the latter to be in motion, because it is apparently the smaller body. The illusion is still more perfect in the case of the revolving dome of the observatory, because the moving body occupies the whole space around the observer.

The following remarkable phenomenon, in which the motion of the observer is not involved, admits of a similar explanation. When large and detached masses of clouds are rapidly passing between us and the moon, provided there are no intervening objects, it is very difficult to resist the impression that it is the moon that is moving. If the clouds are small, no such illusion is produced. It may be objected that, even in case the clouds are small, yet, as they are apparently larger than the moon, the latter ought to seem to move under all circumstances. The answer is, that when the clouds are small we are able to see the stars in the vicinity of the moon, and the apparent invariability of her distance from them enables us to correct the impression, as in the case of fixed intervening objects.

In all the instances heretofore enumerated, it appears that the sense of sight does not give us any positive and direct information; the eye only furnishes the data, from which experi-

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ence, reason, and judgment rapidly draw the conclusions that are ordinarily ascribed to visual perceptions. But even in the case of colors, which are probably qualities conveyed to our minds directly through the medium of sight, the character of our perception depends, in many cases, upon the previous condition of the organ of vision, as well as many other adventitious circumstances that render the phenomena exceedingly complex and very difficult of interpretation. Thus, if we look steadily, for a considerable time, at a strongly illuminated red object on a black ground, the intensity of the color soon becomes enfeebled; if now the eyes are suddenly directed toward a white surface close beside it, we shall see a green image of the same shape and size as the object. In like manner, if the eye be directed intently upon the disk of the sun at rising or setting, when he is red, on closing the eyelids, a distinctly green image of the solar disk will be perceived. Indeed, when the object looked at is brilliantly illuminated, the accidental colors that manifest themselves on closing the eyes constitute a curious and perplexing succession of complementary color-tints, which will continue to be visible until the retina recovers its state of repose. These subjective sensations of color have been carefully investigated by Plateau, who thereby lost his sight in the cause of science.

Metaphysicians and physiologists have differed widely in relation to the services that ought to be attributed to the sense of touch. Some have greatly exaggerated them, considering it the sense *par excellence*. Anaxagoras ascribed the superiority of man over other animals, and his preëminence in the universe, to the hand. Aristotle and, after him, Galen, termed the human hand the "instrument of instruments." Later, Helvetius revived the idea, "that man is the wisest of animals because he possesses hands." The notion has been expanded by Condillac, Buffon, and many modern metaphysicians and physiologists. Buffon, in particular, assigned so much importance to the touch that he ascribed the superiority of the intelligence of one person over another to his having made a more prompt and repeated use of his hands from early infancy. He therefore recommended that infants should be encouraged to use them freely from the moment of birth. Others have considered the hand the source of our mechanical capabilities. The same answer applies to all these views. The hand can only be regarded as an instrument by

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which information of particular kinds is conveyed to the mind, and by which other functions are executed, under the guidance of an intelligent will. The idiot frequently has the sense of touch more delicate than the man of genius, or than the most skillful mechanician; whilst the most ingenious artists have by no means the highest development of the tactile sense.

But it has been asserted that the touch is, of all the senses, the least subject to error, and that it is, therefore, the correcting, the regulating, the geometrical sense. In part only is this substantiated by observation and experience. It will be shown in the sequel that some of the errors of this sense are as striking and grievous as those that happen to the other senses. The sensory apparatus constituting touch is far less specialized than the other organs of sense. As far as known, the same tactile nerves are cognizant of several distinct kinds of sensation. For example, the organ of touch recognizes pain, temperature, titillation, and, with the help of muscular action and motion, size, shape, roughness, and various physical qualities of special materials and objects. On the other hand, the organs of special sensation, such as those of smell, taste, hearing, and sight, receive impressions of a particular kind, in consequence of the peculiar character of the nerves with which they are supplied.

Some physiologists have imagined that the sense of temperature is received through some other channel than the sensory apparatus contained in the integuments; but the most trustworthy experiments afford no adequate ground for the supposition. At present these researches seem to indicate that the several characteristic sensations of touch—pain, heat and cold, and titillation—all arise from affections of the tactile nerves of common sensibility, which are distributed in different portions of the skin. Hence we may infer that the difference of these sensations is to be ascribed to the peculiarity of the impressions received at the peripheral extremities of the tactile nerves. One of the great purposes of the sense of touch is to enable us to judge of the temperature of bodies; and this office it executes alone. It requires no previous exercise; yet how inaccurate, how fallacious, is its appreciation of temperature. This sense is called into action only where there is difference between the temperature of the sensory organ and that of the surrounding medium, or of the substances with which it is

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specially brought in contact. The intensity of the impression is determined rather by the relative than by the absolute thermal condition of the body that excites it. Thus, if one hand be immersed for a time in hot water, and the other in ice-cold water, and then both be plunged into tepid water, this will seem cool to the former, and warm to the latter. A person coming out of cold air into an atmosphere of moderate temperature derives from it a feeling of genial warmth; whilst another coming into the same atmosphere from one much hotter complains of its chilliness. So much are our sensations in this respect dependent on the temperature that has previously existed that the comfortable point will be found to vary at different seasons.

During the Arctic voyages made by Parry, Franklin, Ross, Kane, Nares, and others, it was found that a zero temperature seemed quite mild after the thermometer had been twenty or thirty degrees below that point. In like manner, if on a hot summer day we descend into a deep cave, it will feel cold; if we descend into the same cave on a frosty day in winter, it will feel warm; yet a thermometer will prove that it has nearly the same temperature in both seasons.

But even when the state of our body is the same, the sense of feeling will be found equally fallacious as regards the temperature of bodies. When the temperatures of different substances are compared by the hand, the sensation experienced is not so much influenced by the absolute amount of free heat possessed by each, as by its relative power of abstracting or imparting heat to the skin. When bodies are colder than the hand, substances that are good conductors are felt to be colder than those which conduct heat badly, although really of the same temperature, because they abstract heat from the sensory surface more rapidly. On the contrary, if the bodies are warmer than the hand, the best conductors will seem to be the hottest, because their heat is most readily imparted. For a like reason, if we plunge into water that is of the same temperature as the surrounding atmosphere (provided it is below the natural temperature of the body), the liquid will seem to be cold.

Moreover, the sense of temperature is influenced in a remarkable degree by the extent of surface on which the impression is made. Every one is familiar with the fact that hot water in which a single finger may be held without inconven-

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ience, will be felt to be intolerable when the whole hand is immersed in it. It has been shown by Professor E. H. Weber that if one vessel of water be heated to ninety-eight degrees (F.), and another to one hundred and four degrees (F.), and the whole hand be immersed in the former, while the finger alone is immersed in the latter, a wrong judgment of their relative temperatures will probably be given.

The interpretation that the mind puts upon the impressions made by external objects upon the tactile organs, is partly the result of intuition and partly of experience. Thus, in cases of amputation, an impression made upon the divided extremities of the nervous trunks is intuitively referred to the parts to which they were originally distributed. In like manner, when our tactile organs are in an unaccustomed position, we still interpret impressions made upon them as if they were in their ordinary relations to each other. For example, in the experiment, mentioned by Aristotle, of rolling a pea between two fingers of one hand, which are crossed instead of being parallel, so that the surfaces usually most distant are brought into proximity with each other, the sensation is that of a separate convex body opposed to each of these surfaces, so that the single body seems to be double. When the eyes are closed, we are completely misled by the fallacious interpretation of the impression produced by the lateral portions of the fingers being brought in opposition, which are naturally in a different situation, and at a distance from each other. There are many similar deceptions. If a book is held between the hands, the palms turned outward, the arms being previously crossed, the edge of the book appears in this case to be bent at an angle. If one hand is passed over its corresponding shoulder, and the other under the arm belonging to it, and a book held between the hands thus placed, the edges of the leaves of the book appear to the one hand to be a continuation of the surface of the back of the book. If the tongue is folded back upon itself, the portion thus placed appears to be a foreign body laid upon the tongue, except that the sensibility of the part thus turned is still perceptible. If the tongue is turned edgewise, and then placed against the teeth, the teeth appear to be inclined instead of vertical.

In a large proportion of other cases, our interpretation of tactile sensations—especially of all those relating to the configuration, density, etc., of external objects—is based upon

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experience. Those who have watched the eagerness with which the infant examines by touch every attractive object within its reach are at no loss to perceive how the experience thus early interwoven with the mind, in combination with that derived through the visual sense, causes the tactile and visual perceptions to be so indissolubly associated that each is continually suggesting the other. From observations made upon persons born blind, when the visual power has been first obtained it is certain that the notions of form previously acquired by touch do not aid in the visual discrimination or recognition of objects. For example, if any such person had learned to distinguish a sphere, a cube, and a pyramid by the touch, he would not be able to say which was which by looking at them, until he had learned by experience to associate the two classes of perceptions. In such cases, when the sight is first restored, no ideas are formed of distance, size, or solidity. The blind man of Bethsaida, when his sight was restored, said, "I see men as trees walking." The fourteen-year-old lad who was "couched" by Cheselden, when he first saw, thought all external objects touched his eyes. An amusing anecdote recorded of him shows the complete want, at least in man, of any natural or intuitive connection between the ideas formed through visual and through tactile sensations. He was well acquainted with a dog and a cat by feeling, but could not recognize their respective characters when he saw them; and one day he took up the cat and felt her attentively, and then setting her down, said, "So, puss, I shall know you another time."

It is scarcely necessary for me to dwell on the fallacies of hearing, taste, and smell, as no one is disposed to ascribe an undue degree of infallibility to the impressions furnished through these senses. As regards hearing, the inaccuracies of its indications in relation to the distance, direction, and character of sounds, are proverbial. Indeed, the art of ventriloquism rests upon the uncertainties and inaccuracies of information derived through the organ of hearing. By skillful modifications of the intensity and the qualities of sounds, and by adroitly directing the attention of the hearers to the proper quarters, it is easy for the operator to produce the most complete acoustic illusions.

Certain external agencies are known to excite impressions through several different sensory channels; the sensation being,

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however, in each case characteristic of the particular nervous apparatus. The ear is unable to distinguish the slightest difference between luminous and dark objects; neither is the eye able to discriminate between acute and grave sounds; nor can the taste appreciate the most strongly odoriferous bodies. Hence, we may infer that no nerve of special sensation can, by any possibility, assume the function of another.

From a careful consideration of all the facts connected with the exercise of the senses, it must be evident to every reflecting mind that the organs of sense were not designed to supply us with philosophical instruments. The eye, the ear, and the touch, though admirably adapted to serve our purposes, are not severally a microscope or telescope, a sonometer or siren, and a thermometer or pyrometer. It was well observed by Locke that an eye adapted to discover the intimate constitution of the atoms forming the hands of a clock, might be, from the very nature of the mechanism, incapable of informing us of the hour indicated by the same hand. A telescopic eye that would enable us to see the details of structure on the surface of Jupiter or Saturn, would ill requite its owner for that ruder power which guides him through the town he inhabits and enables him to recognize the friends who surround him. We are not the passive recipients of knowledge. There must be an external world of light and of sound, to give impressions to the eye and to the ear; there must also be an active, intelligent mind by which they are molded, combined, and interpreted, so as to constitute substantial knowledge. It is as necessary that thought should be exerted as it is that there should be something upon which it is exerted. Sensation is passive; attention is active. The distinction is manifest by its own nature; and we find evidence of it in the very forms of language. To look is more than to see; to listen or hearken is more than to hear; to feel is more than to touch.

JOHN LECONTE.

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